Thoroughbred Norman Cow, No. 44, Isigny & Bessin Herd Book.

AMERICAN VETERINARY REVIEW,

APRIL AND MAY, 1895.

NOTICE.—Please address all communications regarding matter for publication, books for review, exchanges, etc., to the Editor, 139 and 141 W. 54th St., New York.

EDITORIAL.

AN EXPLANATION.—Since 18 years that the REVIEW has been trusted to our care it has been our endeavor to make it the veterinary journal of this country: and we thought that we had well succeeded in our efforts and to such an extent, that two years ago, with the desire to secure for her a prospective, permanent and greater life we decided to place it in the hands of a publishing house, whose prospective of success was considered at that time beyond possibility of failure.

Unfortunately our expectations were not realized, and at the time when sudden fall threatening that firm came, to protect our friends and those who for years had by their subscriptions helped us on our work, we decided to notify them that we had resigned our position as Editor.

When this notice was sent, we were not able to state whether this step was merely temporary or permanent. We were however in hopes to once again become sole owner of the management of the journal and it is with much pleasure that we can announce,

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that after great sacrifices that we have once again resumed our line of work as editor and publisher, with the additions of valuable assistants and collaborators.

It is therefore in issuing the double number of April and May, the firsts of the nineteenth volume, that we express the hope that the little interruption and the delay, which has occurred. will be overlooked and that we have to look towards our correspondents to return to us and send us communications as in the past.

That no efforts will be spared on our parts to make the REVIEW what it has always been, that every reason of complaints which have been so well justified during the last few months, will be avoided, are promises that our past mode of doing renders unnecessary.

Subscribers will do us a great favor in notifying us of their desires to continue their contributions and also inform us of what reclamations they may have to make. The bureau of redaction and publication will do its best to satisfy every one, as much and as rapidly as it will be in our power.

NORMAN BREED OF CATTLE.—We have already presented that subject in previous issues, and we feel so interested in the importance of the subject, that once again we have to return to it.

It is no easy matter to introduce a new thing, no matter how good it may be, but the result can be considered much easier when the object in view possesses superior qualities, and that those can be fully examined into and readily recognized by those who are most interested in it.

Who can be benefited by the introduction of the Cotentin cows in the United States? All who are interested in the dairy products. And whether it is the private individual who owns but one cow, or those who have large herds, and deal with its milk and its butter, it is the same. But that is not sufficient. Some who know what must be the qualities of the cow or of the steer, are the ones who can call the attention of the public to these qualities. And when such authorities as the *American*

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Agriculturist write the following article in their excellent journal, it is a question whether our claim for it is necessary.

This, we reproduce from the issue of April 27th:

We have received an excellent communication on the same subject from one of our best zootechnicians, which we are obliged to defer to our next publication.

NORMAN OR COTENTIN CATTLE.

Among the recent arrivals at the port of New York was that of twelve head of Norman cattle, owned by Mr. J. B. Guillot. They were at once taken—as all foreign cattle arriving there must be, under existing laws—to the United States quarantine station, at Garfield, N. J., where they will remain until they have completed the legal detention of ninety days. The Norman, although it is one of the oldest existing races of domesticated cattle, is very little known in the United States, but few of them having ever been imported previous to this recent arrival. The leading characteristics of Norman cattle are great size, with rather coarse bone, long and heavy head, fine horns,—usually bent forward and downward,—long deep body, broad hips, short legs, thick and rather hard skin, well covered with a coat of various shades of red, white, roan and reddish brown in spots, and brindled streaks. The cows have well-developed milk veins, and large, well-formed udders. It is claimed for them by Norman farmers that they are the best dairy cows in the world, and they unquestionably hold the leading position among French breeds of cattle. Twenty-five to thirty quarts of milk a day is not an unusual yield for a Norman cow in full flush, and is sometimes considerably exceeded, while 6,000 pounds within a year is not above the average. It is mainly from their milk that the famous Camenbert and Brie cheeses are made. The butter, known in Paris under the trade name of *beurre d'Isigny*, commands the highest prices at the semi-weekly auction sales of the Halles Centrales, the great market place of the French capital. As beef animals, Norman cattle are noted for early maturity and great weight rather than large net weight of dressed carcass. Cows which have served their purpose in the dairy are fattened until they attain weights of 1,200 to 1,800 pounds. Steers at ages of two and a half to three years weigh from 1,600 to 2,000 lbs., and there are authentic records of Norman oxen which at six years of age weighed 4,185 to 4,335 lbs. This "general-purpose" quality is of great importance to the small proprietors of France, as it enables them to turn to profitable account their "dowager" cows and surplus mules. The beef is of good quality, but there is a larger proportion of bone and offal than in the British breeds of beef cattle. They are heavy eaters, and require an abundance of nutritious food. The strongest claim to public favor made in behalf of this breed is on the ground of its hardiness and freedom from all tuberculous taint. In Normandy great numbers of these cattle are kept in thriving condition without shelter, winter and summer throughout the year.

The habitat of Norman cattle comprises the departments of Eure, Calvados, Manche and Orne. Its origin is lost in the midst of ages. An evidence of its great antiquity is the fact that the Bayeux tapestry, wrought in the eleventh century under

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the direction of Matilda, the queen of William the Conqueror, the cattle represented are fairly good portraits of Norman cattle ar they are seen to-day. Great care has been taken to preserve the purity of the race, and to this end a herdbook was established in 1883, and is still maintained. It is entitled the "Herdbook d'Isigny et du Bessin," and is edited and published under the charge of a commission elected for three years by the Société d'Agriculture. This commission consists ef eighteen members of the society, assisted by three veterinarians, and every animal must undergo a rigid inspection before it can be admitted to registry.

The importation of a breeding herd of Norman cattle is an event which may prove to be of some importance to American live-stock interests. This land of cheap and abundant food material would seem to be thè very place for these gross feeders, with their immense capacity for turning grain and forage into milk and beef. If they sustain the claims made for them, and prove to be adapted to American conditions of soil and climate, they can scarcely fail to be a valuable acquisition.

VETERINARY LEGISLATION IN NEW YORK STATE.—Of all the states in the country there is probably none where veterinary legislation receives more attention.

The legislature this time has had quite a number of bills presented—First one, fathered, we understand, by the New York State Veterinary Society, relates to Veterinary Education in the State—What will be the result of the efforts made by the friends of the bill, we cannot yet tell. The proposed measure is full of good suggestions and of good points, but is not probably yet what is wanted. The profession may be prepared for it. Some say yes, others say no; and amongst those must be found the friends of a second bill, introduced to extend the time of registration. All friends of advancement and regulation of Veterinary practice will be pleased to hear that the measure has been killed and it is to be hoped will never be revived.

A third bill found its way in the Legislature—recommended by the Societies of the State; it has for its object the exemption of Veterinarians from jury duty. An *unanimous* vote of the bill in both houses have brought it before the Governor of the State for his signature.

As the measure has passed and has become a law, the Veterinary profession has reached one step higher in the ranks of professional standing and it is but justice to say that to Dr. Arthur O'Shea the credit is due of having been the main de-

fensor of the bill. He may have received assistance here and there, but we know it is he who, leaving aside all personal interest, has neglected not one stone to be turned, not one occasion to defend the bill and we believe that had it not been for him we could not congratulate ourselves as we do. Dr. O'Shea deserves well of the profession.

SIXTH INTERNATIONAL CONGRESS OF VETERINARY MEDICINE.—We can only give notice, for the present, of this future event and intend to call the attention of our readers to it in our next issue.

Let us say only that the programme arranged is most complete and cannot fail to attract to Berne a large number of Veterinarians.

The congress will hold its meetings from the 16th to the 21st of September.

MAINE APPRECIATION OF VETERINARY MEDICINE.—Among our sundry news we printed some time ago an item from a Portland paper on what any man, we thought, would consider an idiotic cruelty,—it seems that we had a wrong impression of what cruelty is,—and that after all years of study have not made us any wiser. Colics, of what nature they may be, what might cause them, can now by order of a Portland court be treated by what we, wrongly or rightly, may consider the most absurd, if not at heart, cruel treatment, the pouring of some liniment in the patient's ear. If this is done, the fluid will flow from the ear to the seat of disease and . . . . . it is believed by a few that veterinary medicine has progressed in the last twenty-five years.

Will not our friend, Dr. G. Bailey, tell us if the report which he has sent us, and which we reprint, is not a joke, and if legislative action for the practice of veterinary medicine in Maine is not at an early date going to prevent the return of such a disgraceful act and approval from an *intelligent* jury ?

ORIGINAL ARTICLES.

GLANDERS.

By W. L .WILLIAMS, V. S., Bozeman, Montana.

A review and extract from his article in Bulletin No. 4 of the Montana Agricultural Station.

Through the kind permission of Dr. Williams, veterinarian at the Montana Agricultural Station, we present to our readers a series of plates illustrating the lesions of the septum masi in cases of glanders in various stages. These were published in bulletin No. 4 of the Station, which appeared some time ago, in which Dr. Williams wrote a very long article on the disease, in which he reviewed the entire subject of glanders, probably more for the benefit of horse owners in Montana but where no doubt, veterinarians would find much matter of interest.

It is in this way that after a kind of review of the general history of glanders and fancy and of the cause, the *bacillus malleus*, he enters into the pathology and the description of the symptoms, for the illustration of which he uses the plates he so kindly sent to us: and these are followed by the careful consideration of the influences which modify the manifestations and the characters of the desease.

EXPLANATION OF ILLUSTRATIONS.

FIG. I.—Nasal partition from an aged Montana mare said to have been glandered four or five years, during which time she had shown slight discharge from the right nostril and considerable swelling of right submaxillary gland. Otherwise she appeared in good health.

a. Recent glander ulcers, with ragged, ulcerating edges.

q. Old ulcerated patch which has healed, leaving a wrinkled scar. The reverse side of this septum, which is healthy, represented in Fig. IV.

FIG. I.

FIG. II.—1. A portion of one of the turbinated bones, and 2, the nasal partition from a 3-year-old Illinois filly affected with glanders about one year. At A in 1 are seen several solitary glanders ulcers. The entire surface of 2 has been destroyed by the confluence (running together) of innumerable ulcers which at B have penetrated so deeply that they have pierced the septum from side to side so that a man's finger could be passed through the partition from one nostril into the other. At A is seen an old adhersive band, the result of glanders ulceration, which united the nasal partition to the outer nostril wall. The septum shows throughout, a tendency to heal.

FIG III.—Nasal partition from an aged Montana gelding, kept mostly on the range, at times worked upon a farm, said to have been affected for four or five years, his mate being more severely affected during the same period. At A are seen three small ulcers, and at B a dark colored but otherwise apparently healthy spot the nature of which is unknown. No scars from previous ulceration are to be found, doubtless because they, like those seen at A, have all been small and very superficial.

FIG. IV.—The left side of Fig I, showing the appearance of a healthy septum, or nose partition,

FIG. V.—Nasal partition from a 3-year-old Montana farm gelding, affected with acute glanders for a few weeks. Both sides were affected alike, the entire surface of the partition being one continuous mass of ulcerating, sloughing tissues, the gangrene or death of the parts, extending deeply at A so that had the animal lived a few weeks longer the partition would have been personated as in Fig II.

FIG. VI.—Nasal partition from an aged Illinois gelding affected with acute glanders of a few months. From A to A along center of partition is one continuous ulcerating patch, while on either side are smaller ulcerating patches interspersed with healthy patches,. Opposite side is wholly free from ulceration.

FIG. VI.—Nasal partition from a 4-year-old Montana farm gelding, affected with glanders about one year. At A are shown, two large wrinkled scars, the seat of the former ulcerating patches. At B are seen several recent ulcers.

Under the heading of Climates, among those infiuences Dr. Williams says:

CLIMATE.

"Of all conditions of affecting glanders, climate exerts the most notable influence, rendering the horses of some countries almost wholly exempt, while those of other countries suffer extensively and severely. The disease has been for many years extensive and severe throughout central and northern Europe, and Great Britain, Although having a large number of horses the Australian continent is said to be free from the disease, no outbreak having thus far being recorded, although it is scarcely possible that no animals affected with glanders have been imported to that country.

In British India * the disease has at times been extensively imported but was readily eradicated and native animals appear immune.

In Southern Russia and in Roumania and Italy, glanders is very prevalent. Prof. V. Babes of Bucharest, Roumania, from careful investigation estimates that 30 per cent. to 50 per cent. of the horses in that and in other Roumanian cities are affected with glanders, but in a very mild form, generally showing no external signs, and frequently recovering spontaneously. In south Russia and in Italy the disease appears little less common than in Roumania and assumes a like mild type with frequent recovery either spontaneously or with treatment. It also prevails in Africa and in north China.

The immunity of horses against glanders in Australia and British India is, so far as can be seen, referable almost wholly to climatic influences, chiefly to the light rain fall, regular temperature, the dry atmosphere, and similar conditions serve to

*Fleming's Veterinary Science and Police, Vol. I. P. 479.

FIG. II.

render the disease unusually mild, permitting many of the animals to recover in southern Russia, Roumania and Italy.

These influences are very marked also in America. In Mexico, glanders occurs rarely, is not inclined to spread and runs a very mild course.

In the United States we find marked variations in different localities.

In the Atlantic, Gulf and Mississippi Valley States the disease prevails to a considerable extent and in rather severe form.

Even in those states however, three-fourths or more of the horses have the disease in the mild or chronic form, so that they will live for several months or even years, while some of the affected horses will remain fat and vigorous, and perform ordinary work without difficulty for several years, and occassionally they apparently recover, although as a rule still capable of transmitting the desease. A smaller number of the diseased animals in these states are affected in the severe form, the affection running a rapid course, ending in death in from 15 to 60 days.

As we approach the high plains sloping eastward from the Rocky Mountains the disease, although quite common, is very mild and the acute or severe type is seldom witnessed, most affected animals living for months and even years in good condition.

In the higher altitudes of the Rocky Mountains and along their western slope the disease assumes a still more mild type, being very rarely seen in the severe form, but usually of a very mild character which under favorable surroundings does not materially affect the vigor of the animal even though at a reasonable labor, so that the lives of most affected horses are not shortened greatly if at all by the disease but generally live for an indefinite number of years, while many diseased animals show no external symptoms whatever, and many horses at one time plainly affected with glanders make apparent recoveries and remain to all appearances sound for years.

When however, the weather is inclement, stormy and wet

the disease tends to develop in the severe form as was seen in Montana during the fall, winter and spring of 1893–94, but upon the advent of summer with the usual dry weather the acute form disappeared and the disease is rarely reported, not because it is less rare but because it assumes largely a type which is unrecognizable.

When the Pacific coast is reached glanders re-appears in the humid localities near the sea level in its severe form, and runs the same course, with like symptoms as seen in the Atlantic states.

Since the disease is due to the transmission of glanders germs usually contained in the discharge from the nostrils or from farcy buds of affected animals to those which are healthy, and since as a rule the glanders germs are most abundant and active in severe cases, it naturally follows that the contagiousness of the disease is in proportion to the severity it assumes in the animal to which the healty one is exposed, hence the disease is most contagious under those conditions which make it most severe in the affected animals and least contagious where it assumes a very mild type.

Thus we find the disease highly contagious under one set of conditions, and very feebly contagious under others."

Then the stabling, labor, food, breed and age are considered.

The special and the differential diagnosis is there presented and nasal gleet, strangles, pink-eye, acute nasal catarrh, infectious or epizootic catarrhal fever, chronic nasal catarrh, disease of the fasial sinuses, diseased teeth, tumors in nostrils, received proper attention.

In connection with the diagnosis by other than physical signs, we extract as of great interest to American Veterinarians the following relating to the use of Malleine and inoculation."

DIAGNOSIS BY OTHER THAN PHYSICAL SIGNS.

"It being so often utterly impossible to detect the existence of glanders in an animal by any of the signs heretofore described many other means have been devised and tried in order to determine if suspected animals be affected with glanders or not.

FIG. III.

Finding early that the disease was transmissible to other animals by means of inoculation with the discharges from suspected animals, this means of arriving at a safe diagnosis suggested itself and considerable study was spent upon this subject in an effort to render this process reliable and convenient. Horses were tried as test animals but in these it was found unreliable, many of them being quite refractory to the disease, and in addition to the want of reliability the experiment animals proved too expensive.

Asses and mules were also tried, they being more susceptible to the glanders poison than horses, but these animals although somewhat more reliable were more difficult to obtain in many places and their value tended to prohibit their use. Then followed a long series of experiments with smaller animals including guinea pigs, rabbits, rats, mice and others, some of which responded promptly to the inoculation and appear to have yielded some practical results.

But in general the process proved unsatisfactory and troublesome delaying action in regard to suspected cases until the experimental inoculation had been tried, and besides, the inoculation was not practicable or convenient in most hands.

Even had inoculation in itself proven reliable, there are many cases of glanders in which there is no nasal or other discharge from which material can be obtained from the living animal for inoculation while it was found that in very mild cases of glanders the nasal discharges were very unreliable and produced the disease in comparatively few experiment animals.

The study of the pathological anatomy or structure of the diseased parts by Virchow, in 1855, gave new hopes of a basis for the safe diagnosis of suspected cases and it was attempted to practically diagnose the disease in the living animal by a microscopical examination of the enlarged lymphatic glands from between the jaws. Such means, however, were not available to most veterinarians and being rather impracticable generally, never came into common use.

The observations of Turn, Hallier and others in 1868 and the

following years, in which they found in the blood and other parts of the body, a living bacillus, which was finally fully identified and proven as the sole cause of glanders by Loefler and Schutz, in 1886, gave the hope that microscopical examination of discharges or diseased tissues for the glanders bacilli, would prove a very valuable means for diagnosing obscure cases, but the mild ones, those for which some reliable test was desired, furnished comparatively few of the bacilli, rendering their detection very difficult and, besides, only a very few persons were capable of making a reliable microscopical diagnosis. The next and crowning discovery in relation to the diagnosis of glanders, based upon the discovery of the glanders bacillus of Loefler and Schutz and suggested by the discovery of tuberculin by Dr. Kock was the discovery and preparation by Kalning and Helman of Russia, in 1891, of the product of the glanders bacillus known as mallein. This substance represents the poisonous products given off or formed during the growth of the glanders bacilli and is prepared by growing the germs artificially on potatoes, beef bouillon or other culture material and when the bacilli are well developed they are separated from the fluid by filtering and the fluid containing the poisons generated by the germs is then heated repeatedly to a temperature of about 120° C (248° F) and is either retained securely sealed in liquid form or is precipitated by means of alcohol and dried (dry mallein).

This substance when injected in proper amount into the system of a horse affected with glanders causes in a few hours (5 to 16) a marked rise in temperature, or fever, amounting usually to 2° C (4° F) or more, above the normal body temperature.

In acute or severe glanders we already have an elevation of temperature and in these we in some cases find no marked reaction but they are easily diagnosed without the aid of mallein, in the mild chronic cases we usually find no fever whatever, and it is in these we need the aid of mallein in arriving at a safe conclusion.

Our present knowledge of disease indicates that in glanders the bacilli themselves are not the cause of the chief symptoms in

FIG. IV.

the acute or severe cases, but that they multiply in the blood and tissues to such a degree that the poisonous waste products given off by them, unless promptly thrown out of the system or destroyed, produce fever and other general symptoms of disease.

In the mild or chronic form of glanders these germ poisons are not formed so rapidly and the system soon becomes so accustomed to their presence and the means necessary for their removal , that they are carried from the body before they produce any change in the body temperature.

If then we add to the amount of this poison which the animal body is accustomed to handle and throw out without difficulty a small amount of artificially prepared mallein we create such a disturbance in the system of the animal as to cause the temperature to increase several degrees above the natural body heat, accompanied by usual symptoms of fever and aggravating for a time all the symptoms of glanders.

During the short time since the discovery of mallein it has been tested by leading scientific veterinarians in every part of the world, and, so far as I have been able to find, no investigator has condemned it, but all unite in asserting that its use has at least furnished us with an agent by which we can readily and safely diagnosis the disease, not alone in suspected cases, but in those animals where the most careful physical examination can detect no signs of disease.

Mallein has proven so reliable that it has received governmental recognition in many European countries and its use officially advised or commanded.

In cavalry regiments where glanders had broken out, the use of mallein on all exposed horses was made obligatory in Germany and Belguim in 1892 and France in 1893. During the present year (1894) the use of mallein has been made obligatory in Switzerland in all horses, mules and asses, in stables or establishments where glanders has occurred, and in all cases of suspected glanders; and in all cases where the use of mallein is followed by a well marked fever and other characteristic results

of the mallien test, the animal is destroyed after having been appraised.

The reaction or symptoms produced by mallein in glandered animals are well marked and highly characteristic. Preparatory to the test the temperature of the suspected animal is taken two or three times during the day prior to the trial, and a record of the temperature is again made at the time of injecting the mallein. The proper dose of mallein is then injected beneath the skin, usually along the neck, by means of an inoculating or hypodermic syringe. The spot where the injection is made is first cleansed by washing with a solution of corrosive sublimate or other anteseptic liquid and the needle of the syringe is carefully disinfected by immersing in such a solution or holding in a hot flame for a moment, until any forms of bacterial life which may exist in the needle are safely destroyed. These precautions are taken to render it certain that nothing but the pure mallein is introduced beneath the skin thus avoiding the danger of complicating or rendering valueless the trial, Subsequent to the injection the temperature of the animal is taken every two hours for twenty-four hours, and careful record is kept of each measurement.

In animals suffering from glanders even in a mild degree, showing no outward signs, the temperature usually shows no particular change after the injection until after a lapse of five to eight hours and sometimes longer, when it suddenly rises as much as two, three or more degrees centigrade, above the normal body temperature, the highest point being usually reached eight to sixteen hours and sometimes later after the injection, after which the temperature slowly falls, reaching the normal again in twenty-four to thirty-six hours, or longer.

At the point where the mallein is injected the glandered animal usually shows a very considerable painful swelling, in many cases the animal becomes chilly as shown by shivering, the general appearance dull, the hair rough, appetite is lost, and in some cases any existing symptoms of glanders are aggravated, the nasal discharge if present before, may become in-

FIG. V.

creased, the glands more swollen and the ulcerations in the nostrils may increase in size and number. In other instances as will be seen later, especially in mild cases, no such evidence of increased disease action occurs. On the other hand animals free from glanders show none of the above symptoms in a marked degree after mallein injection, the temperature rarely increasing one degree C, if at all, the swelling at point of injection being small, soft, and not very painful to the touch, while the appetite and general appearance remain unaffected.

Other diseases than glanders do not affect the action of mallein, and it has been used on animals, affected with distemper (or strangles), disease of the cavities of the face with abundant nasal discharge, botryomycosis (a disease similar to lumpy jaw of cattle, affecting at times the legs of horses like farcy) and other diseases resembling glanders, but in all cases the injection produced none of the results found in that malady.

Again it has been suggested that other substances of a similiar character, such as tuberculin (the product of the bacillus tuberculosis or consumption germ) might produce the same results when injected into the system of a glandered horse, but experiments with tuberculin at least, contradict this view.

District Veterinarian Walther * of Saxony injected beneath the skin of each of three glandered horses 0. 3. c. c. each of tuberculin without producing a reaction while a like amount of the same tuberculin used upon a tuberculous cow produced the typical fever.

In rare cases the use of mallein on animals free from glanders has produced a decided elevation of temperature but not in the typical manner, for while in cases of glanders the fever usually reaches its highest point in from eight to twelve or rarely sixteen hours, in these rare cases of fever in animals free from glanders the high temperature is not generally reached until nearly or even more than twenty-four hours after its use. In cases of doubt where the elevation of temperature is clear, yet

*Deutsche Zeitschrift fur Thiermedicin, Vol. XIX, p. 173.

not so great as to clearly indicate glanders, a second or third trial may be necessary to determine if glanders exists. In some cases repeated injections of mallein increase, in other cases decrease the severity of glanders symptoms. Prof. A. Johne* of the Royal Veterinary school at Dresden tabulates the results of mallein tests upon forty-nine horses which had either been exposed to glanders or had shown symptoms which rendered them suspicious but not sufficiently definite, except in one case, to warrant a diagnosis of glanders. Of these twenty-five showed an increase of temperature of 1° C. (1.8° F.) or more, of which twenty were destroyed and found upon post-mortem examination, glandered, the others upon re-testing were pronounced sound. Five animals somewhat suspicious before testing, but showing no elevation of temperature, were destroyed and found free from glanders. The other animals remained apparently sound. Professors Hutrya and Preisz† of Buda Pesth, Austria, review 486 tests with mallein upon horses exposed to or suspected of glanders, of which post-mortem examinations of 126 animals were made. Of this number twenty-two animals showed an elevation of temperature of less than 1.5° C. (2.7 F.), eight of which were found glandered, thirteen free; fifteen horses showed a reaction of 1.5° to 2° C., all of which upon post-mortem were found glandered; and eighty-nine animals reacted 2° C. or over, of which eighty-four were found glandered and five healthy. Of these five, one did not show the typical reaction described above, while in the other four the writers suspected serious errors either in the quality of mallein used or in the post-mortem examination. H. Schindler,‡ chief veterinarian to the 7th Austrian hussars, after ineffectual attempts to stamp out glanders in his regiment by the ordinary means of destroying all those showing symptoms of the disease, used mallein upon twenty-six exposed horses, three of which reacted 2° or over, and after death, were found glandered. The three showing the next highest tempera-

* Deutche Zeitschrift fur Thiermedecin, March, 1893.

† Ibid, September, 1894.

‡ Œsterrichischse Monatschrift fus Thierheilkunde, July, 1894.

FIG. VI.

ture, all less than 2° above normal, were found upon examination after death to be healthy.

Laquerriere* with Latour, records a test with mallein in an infected transfer stable in Paris containing 141 animals, but ten of which showed signs of glanders prior to the test. These ten, with eighty-seven others which had shown no symptoms of glanders reacted to the mallein to the extent of 2° or over, and upon post-mortem examination the entire ninety-seven were found glandered. Twenty-five of the remaining animals showing a fever of 1° to 1.5° after the mallein injection, were killed and found glandered, while five others, showing no reaction, were found healthy upon post-mortem examination, and the remaining twelve, showing no reaction, remained sound. Nocard† of the National Veterinary School at Alfort, France, after trying in vain by rigid inspection and killing of all diseased animals found, to control glanders in a transport stable in Paris containing some 6,000 horses, finally resorted to the use of mallein, and was surprised to find that several hundred animals showed fever after the mallein injection, scarcely any of which showed any signs of the disease before. All these were killed, and post-mortem examinations showed them all to be glandered, many of them only to the extent of a very few small tubercles or nodules in the lungs, the nature of which was clearly proved by making pure cultures of the glanders germs from these nodules.

I. Neiman‡ speaking of the use of mallein in Russia gives a long list of investigators, all of whom fully agree to the great merit of this substance as a diagnostic agent in glanders. Dr. F. Boschetti§ records a considerable number of experiments with mallein in Italy, and pronounces it a thoroughly reliable test for glanders in all stages. Although less numerous, tests with mallein in the United States have proven quite as satisfactory as in Europe. De Schweimitz‖ and Kilbourne of the

* Ibid, March, 1892.
† Bulletin de la Societie Centrale de Medicine Veterinaire, 1892, p. 978.
‡ Revue Veterinaire, November, 1893.
§ Œsterreichische Monatschrift fur Thierhdilkunde, August, 1893.
‖ Proceedings United States Veterinay Medical Association, 181–93.

United States Bureau of Animal Industry cite thirty-eight tests with mallein (mostly upon glandered horses) either by themselves or under their directions, in all cases proving wholly reliable. Dr. Pearson,* Professor Veterinary Medicine, University of Pennsylvania, experimented with mallein upon guinea pigs, some of which were healthy, others glandered; the latter reacted strongly.

Dr. Nuppe, in an unpublished paper, reports mallein tests upon about three hundred horses in large establishments in New York city where glanders had long been prevalent, with the result that several cases of internal or masked glanders were found and destroyed, putting an end to the ravages of the disease in the infected stables.

In the brief time during which this situation has existed it has not been practicable to arrange for experiments with contagious diseases at the station, so that our opportunities for making mallein tests have been upon farms where the disease existed, a condition which has necessarily restricted our experiments within very narrow limits. Our experiments with mallein were confined to two stables in which glanders had existed for some time and the mallein test was applied to eight animals. The results of these eight tests may be briefly summarized, as follows:

NO.	DATE.	AV'RAGE TEMPERATURE DAY PREVIOUS TO TEST.	TEMPERATURE AT TIME OF INJECTION OF MALLEIN.	HIGHEST TEMPERATURE AFTER INJECTION.	NO. OF HOURS AFTER INJEC. WHEN HIGH'ST TEMPERATURE OCCURRED.	INCREASE OF TEMPERATURE IN DEGREES CENTIGRADE.
1	Feb. 17, 1884	37.2	36.7	39.7	12¼	3.0
2	" " "	37.9	36.2	39.7	10	3.5
3	" " "	36.9	37.3	40.2	10	2.9
4	" " "	——	36.9	38.0	10	1.1
5	" " "	——	36.9	39.0	12¼	2.1
6	July 3, 1894	38.3	37.7	40.6	12	2.9
7	" " "	38.2	37.5	39.7	12	2.2
8	" " "	38.1	37.3	38.4	12	1.1

Nos. 1, 2, 3 and 5 were all clearly affected with glanders and so pronounced before using the mallein. As will be seen all

* Journal Comparative Medicine, September, 1891.

FIG. VII.

showed a reaction to mallein of not less than 2.9° C (5.22 F). No. 5 showing a reaction of 2.1° was apparently well and so continues, which may be accounted for by an accident in injecting the mallein, the day being so cold that the mallein froze in the syringe, rendering the dose uncertain and no opportunity has occurred to make a second test. No. 5 has at no time shown signs of glanders, although the reaction clearly denotes that she is affected. She is the mate to, and was driven with No. 5, until the latter became seriously affected with glanders, when they were separated and both are still under observation. Nos. 4 and 8 remain sound.

The foregoing observations upon the employment of mallein form but a part of the great number of records of its use and serve only to illustrate its great value in diagnosing glanders. Its use under proper precautions is almost wholly without danger of error and places in the hands of veterinarians for the first time a reliable agent for determining promptly the existence or absence of glanders in suspected or exposed animals. The preparation and use of mallein is constantly becoming better understood, so that the errors made in its use at first, are now mostly understood and avoidable. The mallein test possesses a double value discovering unsuspected cases of glanders and freeing from suspicion animals affected with other diseases similar in appearance to glanders."

The subject of glanders in other animals and in man occupy also the attention of Dr. Williams and then he initiates us to the prevalence of the disease among Montana horses and reviews the treatment; a question of no little importance at present:

TREATMENT.

"In most countries the treatment of glanders is prohibited by law, and instead, the control and eradication of the disease is sought by compulsory quarantine, slaughter and disinfection. Its treatment has, until very recently, rarely been undertaken by qualified veterinarians, except as an experiment, while quacks and owners, ignorant of the nature of the disease, have been pro-

fuse in their efforts to cure the disease, it, in the meantime spreading to other animals. All kinds of drugs and nostrums have been used by these persons with the only result, if any, of causing a temporary improvement of symptoms rendering it all the more dangerous because unrecognizable. The curabllity of glanders has long been a vexed question, a few veterinarians holding that many cases were curable, while the majority held that all cases were positively incurable and surely fatal and between these two extremes every grade of opinion was held. These views have been modified largely by the character which the disease assumed in the particular country in which the veterinarian giving the opinion was located, so that those seeing the disease in countries like southern Russia, Roumania and Italy, where it is very mild, have been the most confident of its curability. With our increased knowledge of glanders and other infectious diseases the idea of a positively fatal contagious disease has well nigh disappeared and it is now quite generally admitted by leading veterinarians that some cases of glanders recover either spontaneously or under treatment.

Dr. Fleming, * late chief veterinarian to the British army, held several years ago that possibly some rare cases of farcy of a mild type and in the first stage might be cured, and lately † in the light of our present knowledge of the disease admits the possibility of recovery in a much greater number of cases.

Prof. Williams ‡principal of the New Veterinary College, Edinburgh, admits the possibility of recovery in mild cases of farcy. Prof· F. Friedburger of the Munich Veterinary school and Prof. E. Frohner§ of the Royal Veterinary College at Berlin assert that rarely is glanders curable, an opinion shared by Prof. Dieckerhoff‖ also of the Royal Veterinary School at Berlin, who relates an instance of recovery from glanders occurring in

* Veterinary Sanitary Science and Policn, Vol. I., P. 505.

† Veterinary Journal, Oct., 1894.

‡ William's Principles and Practices of Veterinary Medicine.

§ Friedberger und Frohner. Lehrbuch der Speciellen Pathologie and Therapie.

‖ Dieckerhoff's Lehrbuch der Speciellen Pathologie and Therapie. Vol. I. P. 154.

his practice. Prof. E. Nocard * of the National Veterinary School at Alford, France, gives the opinion that the use of mallein as heretofore described for diagnostic purposes not unfrequently works a cure. Dr. E. Semmer, † chief of the epizootic department of the Royal Institute for Experimental Medicine at St. Petersburg, states that Decroix and Bouzom in Algiers cured numerous cases of farcy, while Brusaco,, Tollovio and Saltella of Turin, Italy, report having cured twenty-five to fifty per cent of cases of glanders and Neuman in the Caucasus, Hauber, Bollinger of Munich and others report successful cures.

With Itzkovitch, Prof. Semmer observed at Dorpat, Russia, the spontaneous recovery of a severe case of glanders which had been induced by experimental inoculation.

Mercury and iodine have both been used in Russia with apparent success in glanders of horses and man, but Prof. Semmer regards mallein as giving the greatest promise of a fairly successful curative agent' using it in a similiar manner to that already described for diagnostic purposes, and in this connection states that with this substance, Pilavios, principal veterinary surgeon to the Greek army, cured eight glandered horses, and Helman of Dorpat, Russia, three glandered horses and one ass, their cure having been tested, the animals being thereafter proof against inoculations with virulent glanders matter and showing no reaction to mallein. With blood serum from these horses Prof. Semmer rendered cats and guinea pigs proof against glanders. Leblanc ‡ asserts that certain forms of glanders are curable by the use of mallein.

V. Babes § Professor of Experimental Pathology, Bucharest, Roumania, after noting a long series of cases of unrecognizable or masked glanders in horses and their recovery, spontaneously or with the use of mallein, says: "The unsuspected frequency of masked and latent glanders in horses, and the fact that spon-

* Deutsche Zeitschrift fur Theidmedicin, Sept., 1894.

† Ibid "Neber gutartige heilbaren Formen des Rotes." Dec. 1893.

‡ Esterreichische Monatschrift fur Thiereeilkunde, July, 1893.

§ Veterinary Journal, Vol. XXPIX, p. 266.

taneous recovery takes place in a large number of cases of the disease—the possibility of which has been denied by most investigators, but must, nevertheless, be looked upon as a rule, for otherwise half the horses would die from glanders in certain countries—suggests the question whether the glanderous infection in other animal species, and more particularly in man, does not present the same peculiarities as those I have just described." Prof, Bonome * of the University of Padua, Italy, records the successful treatment of glanders in horse and man by the use of mallein. Prof. Le Clainche † of the veterinary school at Toulouse, France says: "There is nothing fatal in glander infection, on the contrary, a large number of animals resist it and the lesions already developed cicatrize (heal). It is established that glanders may disappear in the absence of all treatment."

It should be noted that nearly all the above cited cures from glanders are reported from the most southerly portions of Europe, where the disease is of a very mild character, resembling in all essential particulars the type the malady usually assumes in Montana and other Rocky Mountain states, in which region several veterinarians have seen apparent recoveries from this affection, and where it not rarely happens that animals pronounced glandered by veterinarians, apparently recover and remain sound so far as can be seen, frequently leading the owner to believe that an error has been made and that the horse had in reality been affected with some other less serious disease.

It is not uncommon to see in this state animals clearly affected with glanders which, according to the observation of the owner, have evidently been affected for five, six or more years, retaining at all times the general appearances of good health, part of the time free from any glanders symptoms and constantly able to perform ordinary work, showing in every way a strong tendency to recover.

In one case now under observation, known as No. 6 in the

* The Veterinarian, Vol. LXVII, p. 751.

† Veterinary Journal, Vol. XXXIX, p. 2.

table on page 18, apparent recovery from acute glanders has taken place in a few months, without treatment, while in No. 7 of same table, glanders is clearly present according to the mallein test, the animal showing otherwise every evidence of robust health. It consequently seems probable that spontaneous recoveries from glanders take place among Montana horses, especially among those living wholly free and practically wild upon the high ranges.

Although most modern investigators admit the curability of some cases of glanders, these recoveries are confessedly few and the treatment of the malady, whether by medicines or mallein, is yet purely experimental, unworthy of confidence from a practical standpoint, yet pointing hopefully toward reliable treatment in the near future. Apparent recoveries from glanders are, unfortunately, too often apparent only, and serve to continue the spread of the disease.

A horse apparently recovered from glanders is worthy of being regarded with very great suspicion, and his apparent recovery should not be accepted as real until satisfactorily tested with mallein, and the treatment of glandered animal, except experimentally, by competent investigators, should be prohibited until further knowledge is obtained upon the subject."

The bulletin closes with a few remarks on the question of immunity and the eradication of the disease from Montana.

The entire pamphlet is a valuable addition, even to veterinary libraries, and is called to be of great value, presenting as it does before the public the general subject of glanders, which so many believe they know all about and yet are ignorant of the first fact connected with it.—[A. L.]

CANINE DISTEMPER—ITS CAUSES, SYMPTOMS, SEQUELS AND TREATMENT.

W. E. WADAMS, V.S.

MR. PRESIDENT AND GENTLEMEN:—The subject I have chosen for my essay, is one, I think, much overlooked by the

Veterinary profession, for the simple reason, that the majority of the practitioners consider "Canine Practice" of small importance, and not sufficiently renumerative for the time and trouble expended; but, be that as it may, it is a source of considerable income to me, for I find that men who own dogs valuable enough to treat, do what they can cheerfully for their pets and are willing to pay reasonably for the effort.

At one time I was inclined to believe from the numerous forms distemper assumes, that there was really no such distinct disease, but that a variety of complaints had been ignorantly jumbled together under a term which affords no distinguishing mark by which to test its separate existence. But closer observation has enabled me, I think, to seize the clue, which explains all these apparent discrepancies, and also leads the way to the scientific treatment of this sometimes unmanagable disorder.

I began my investigation by considering what symptoms invariably attended upon distemper. At first I was completely puzzled, for I found in one series of cases nothing but cough, and discharge at the nose and eyes, in another these symptoms were absent, and their place supplied by head symptoms, and fits, whilst again in the third set, the dogs all suffered from diarrhœa with discharges of blood and had neither head nor chest symptoms in any stage of the disease. In all these cases, however, I found there was fever, and that of a peculiar kind. This was not like the ordinary feverishness which dogs are subject to, and which attends upon almost all their acute attacks, but of a low typhoid character, with great exhaustion, loss of appetite and in the latter stages a collection of brown fur or as it is called in human medicine "Sordes," about the teeth.

It seems strange that such men as Dr. Jenner, James Woodruff Hill, Forrest and others, did not think of this fact, but if so have failed to mention it. Their experience in vaccination proved a failure and this is the universal opinion of all modern professional men who have given it a trial. Everyone, however, must recollect numerous instances in which a simple clue once seized will explain away all differences or difficulties, except the one

astonishing fact of this simple clue not having long ago been detected.

The points of similarity between distemper in dogs and typhus fever in man are so strongly marked that a treatise upon the latter is all that is wanted to enable anyone who understands medical terms or phrases to treat distemper, or as I call it typhus fever with the greatest probability of success.

I know full well that this disease is looked upon by many with contempt and as a loathsome disease, but we are here to treat all domestic animals, and why should the ailments of our faithful friend the dog be omitted? His care and treatment belong to our profession and demand attention, and in years to come the treatment of the true friend the dog will be sought by the professional man instead of ignored as unworthy of his attention.

How many practitioners are there who do not despise the dog as a patient, and hate to be called upon to treat him, but for my part give me a man who loves or appreciates the value of his dog and I can invariably satisfy its owner, replenish my exchequer and do some good to the poor though despised dumb brute.

The old adage still remains, and that is, "Tis only a dog," and poor old Watch, Rover or Spot is left to die or get well as the case may be, starve or freeze after years of faithful service.

Symptoms:—I define distemper in the dog as a fever of a nature similar to typhus and always followed by these symptoms:—

There is first a dullness and restlessness with partial loss of appetite, heat and dryness of the nose. rapid but feeble pulse, and dull eye the white of which is generally streaked with dark red blood vessels, and the dog seems to be extremely sensitive to cold. The urine is scanty and high colored, considerable thirst, the motions are either costive or loose, if the latter often of a pitch color, the flesh and strength fail in a remarkably rapid manner so that the dog is unable to stand inside of a week; the appetite by that time is entirely lost and frequently the food which is given by force is returned or speedily passed through

the bowels unchanged. The respiration generally becomes quicker than natural, though this symptom is not so universal as others I have mentioned. In fact all the processes of respiration, circulation, digestion and secretion are disturbed in a remarkable degree, and in this I believe is the essence of the disease, and the healthy return of these functions is always an indication of convalesence; the blood is no longer depurated properly by the agency of the lungs, liver and kidneys, nor renewed by healthy materials, the result of good digestion.

The circulation consequently is imperfectly carried on, and the brain is supplied with impure blood which is full of matters acting as as a poison to it, and as a consequence death often takes place at an early date from a fit. Whatever secretions are affected, are vitiated in quality and altered in quantity, sometimes being almost stopped occasioning the dry husky cough and constipation of the early stage; and sometimes in excess where you have the profuse offensive discharge from the nose and bronchii; or the pitchy motions from the intestines which accompany the progress of the disease; such are the general and characteristic symptoms of the disease.

The local complications involved in this complaint may be enumerated as follows: 1st. The affections of the chest; 2d. Of the liver, stomach and bowels; 3d. The kidneys; 4th. Of the brain and nervous system; 5th. Of the skin. Each trouble being represented by the usual phenomina pertaining to said organs.

Etiology:—The most common cause of distemper is no doubt infection, but it is occasionally epidemic, and then most probably depends upon some condition of the air, But it also seems to be the natural tendency of all debilitating diseases in young dogs to run on into this typhoid type.

Whether the disease is common catarrh or influenza, or inflamed liver or lungs, or even the irritative fever of worms or teething in all these cases the tendency seems to be to put on the form of low typhus and this is especially the case when the dogs are ill fed, or crowded together in poorly ventilated kennels; or in fact submitted to any of the ordinary predisposing

causes of typhus fever in the human subject. And this disease once established, soon spreads to all within its reach of its influence. The infection seems to be carried with them by dogs after their convalesence. I have frequently known of a severe attack supervene upon the contact with a puppy in the slips which was sufficiently recovered to run, though of course not in a fit state for such an exertion.

The kennel also seems to retain the infection for a long time it being most probably absorbed in the urine, etc.

The walls, etc. should be well washed with chloride of lime or some other disinfecting fluid. After the dogs are removed some time should elapse before others are placed in them. Dogs seem to be particularly liable to distemper when approaching maturity, the greater number being attacked between nine and eighteen months old, but in the typhus fever of man it is not confined to that age; the suckling and the old dog are also open to its attack, though in a much less degree.

As in the human being again, one attack generally though not always preserves the individual from another attack.

Indeed the laws of contagion and the statistics of the two diseases are precisely the same, making allowance of course for the difference in the time of coming to maturity, and reckoning age in the dog by months and in the man by years, so that a dog twenty-one months old may be considered as mature, as a man twenty-one years of age.

Period of Incubation.—This disease like typhus fever takes from ten days to two weeks after infection before making its appearance.

Duration.—Distemper varies in the length of attack from a few days to two or even three months; but the average period like that of typhus fever is twenty-one days.

Diagnosis.—In its wildest form distemper is very often mistaken for ephemeral feveror influenza. Severe distemper is most likely to be confounded with hydrophobia, from which it may be distinguished either by the absence of all aberration of intellect, or by the difference of the form of its manifestations. In distem-

per there is no restlessness, or at all events only a tendency to change the posture, whilst the hydrophobic dog is always on the watch and eyes every one with a wild suspicious gaze. The distempered dog is certainly nervous but only from fear, while the hydrophobic dog knows neither fear nor pain, and will also resist to the death any threats or actual punishment.

If the brain is much affected in distemper there is almost always a fit or paralysis neither of which occurs in hydrophobia, and lastly the distempered dog eats nothing, while the hydrophobic animal has a depraved appetite, and devours any filthy material which comes in his way.

Distemper is liable to be confounded with any of the inflammatory diseases which attack the brain, lungs, liver, stomach, or kidneys, but in the simple inflammation of any of these organs there is not the extreme and speedy emaciation and loss of strength noticed always in distemper.

Treatment.—The management and remedies used in this disease must vary with the stages of the malady, and must necessarily be considered under four heads, viz.: The periods of incipiency, reaction, typhoid and convalesence. The incipient stage, is, I am sure treated with more success in the following manner than any other.

Put your puppy or dog as the case may be in a comfortable warm well ventilated place, avoiding of course damp or dark cellar; a good dry bed and clothing if in a cold climate. Give a puppy ten months old the following:—

℞	Hyd. Chlor. Mite,	grs. 2
	Pill Rhei C.,	Dr. I
	Soda Bicarb.,	grs. 30
	M. ft. pulv.,	Put in six capsules

Sig. Give one every two hours until all are taken.

At the same time put ten grains of the hyposulphite of soda to each pint of water the dog takes. Feed on boiled milk, soda crackers and a little well cooked mutton, it being easier digested. The stomach will bear more mutton than any other meat. Many

men advise oat-meal, but from an extensive experience both in treating this disease and many others, I find oat-meal too loosening unless combined with a sufficiency of wheat flour, and as the bowels have generally a tendency to relaxation, we can not be too careful, but I must here remark that to a healthy dog Scotch oat-meal is his greatest support.

The period of reaction I may say, commences the moment a local symptom shows itself, and it is at this stage that the greatest difficulty in the treatment arises. The chief complications that draw our attention now are the chest, the abdomen and the head. The skin complications being of minor importance, except a sign of the severity of the attack.

We will now take up the chest complicated with the affection of the bowels.

Now gentlemen with all due respect to my superiors I am antagonistic to all. Dr. Stonehenge, Dr. J. W. Hill, Dr. Jenner and numerous others claim tartar emetic their sheet anchor. I claim it a dead letter.

In chest complications I want to lower the temperature and keep up the strength, owing to the debilitating influence of the disease. To dose we must use our knowledge of materia medica, and this is my conclusion after considerable experience in the treatment of this disease, with a fair knowledge of the above named book.

I take my temperature, and if I find a high one I give a toxical dose of quinine, say ten grains, put in a hot bath and rub dry, then blanket and if not relieved in eight hours I blister the sides with cantharides, muzzling the dog at the time, then I give the following prescription, being always particular in its administration.

℞ Pulv. Digitalis, grs. 6
Pulv. Pot. Nitras, dr. Iss
Ext. Glycerizzha, dr. I
Syrup Q. S.
M. F. Mass et divide in capsules XII.

Sig. Give one every four hours.

If the animal does not improve on this treatment, and seems to lack recuperative powers, I begin a stimulating treatment, feeding beef tea, mutton broth and raw eggs beaten up with milk.

The abdomen is generally the seat of severe intestinal disorders, the principal being a diarrhœa accompanied with pitchy discharges. I invariably treat this complication with small quantities of calomel, one-sixth of a grain, prepared chalk, ten grains, of subnitrate of bismuth and turpentine emulsions, always remembering if any intestinal disturbance is due to intestinal parasites, remove them as soon as possible using the mildest remedies on account of the irritable condition of the alimentary canal, areca nut for the tenia family and oil of wormwood for the lumbrecoids.

The head symptoms are generally a severe complication especially if attended with chorea. I put a seton in the back of the neck, put tr. iodine and tr. cantharides along the spine, every other day for two applications and give internally the following.

℞ Strychnia Sulp., grs. I
Ext. Gent. Q. S.

M. F. and Mass. Divide in fifty pills and put in capsules No. 50.

Sig. Give one night and morning after feeding, gradually increasing the dose until four a day be taken.

Typhoid Stage.—Watch your patient carefully as this is the stage which I believe indicates the essence of the disease known as distemper, and unless the dog has been evidently submitted to the contagion it cannot be pronounced to have had the distemper.

I give the following tonic three times daily.

Quinine one grain, port wine one half ounce, or cod liver oil one half ounce, and tr. chloride of iron ten minims, controlling the bowels with subnitrate of bismuth, ten grains and sulphate of morphia one fourth of a grain every four or six hours as ocassion requires.

Use injections of starch, always using such food as will be easily digested, and be sufficiently nourishing to maintain the strength of the patient.

Now Mr. President and gentlemen, I thank you kindly for your patience and attention, and I sincerely hope that this essay may elicit some discussion.

The subject I am aware is obnoxious to many but in the future will undoubtedly benefit the whole profession, for as the dog is bred so is the requirements of the veterinarian in demand.

This simple essay although not so technical, pathological or flowery as some, is my own experience based upon facts. I hope this may hold up support or in any way benefit the poor but faithful companion of man, the dog.

UNITED STATES MEAT INSPECTION.

By Dr. E. Salmon, V.S., Chief Bureau of Animal Industry.

Editor American Veterinary Review:

Dear Sir:—The communication of Dr. Schwarzkopf in the March number of the Review, demonstrates once more how difficult a matter it is for some gentlemen to comprehend either the actual condition of the German meat inspection service, or of that which has been established in the United States.

I should not ask your indulgence to print another instalment of this discussion were it not that certain statements made by Dr. Schwarzkopf bring the matter to such an acute stage that further attention is demanded. He tells us that he "was very much annoyed when a member of the association assailed the United States Meat Inspection Service at our last meeting, for which there was no occasion whatever;" and then he proceeds to repeat and intensify the offense, in the light of all that has been said and written on the subject!

If none but our people saw the Review, I might leave his absurd misstatements to the intelligence and knowledge of the

readers, but as people in other countries will read them, who can only look to your pages for facts, it now becomes my duty to insist and to prove that certain of his statements concerning our meat inspection system are absolutely incorrect.

In order that I may not be accused of garbling, permit me to quote an entire paragraph. He says:

> While the United States Meat Inspection owes its origin to the German law, it can well afford to differ in the conception of what is sound and unsound flesh as long as the people of the United States pay for everything. This little meat inspection of ours is merely for a show, whereas Germany's system is for a general purpose; ours is to help along a commercial undertaking of a certain part of our population, theirs is for the benefit of the whole nation of 55,000,000 people; ours is a neat little branch of a government department; theirs is a law in itself, and a gigantic system, with a thousand branches running through the whole country.

Here we have a neat example of that German egotism and supercilious assertion which has lately been served up to us *ad nauseum*, and which is sufficient excuse for the rather pointed replies which I have found it necessary from time to time to offer. Surely, a gentle rejoinder could not be expected in such an aggravated case.

How, and in what respect, does the United States Meat Inspection owe its origin to the German law? It would be interesting to know when this astounding fact was discovered and who was its discoverer. And what are the grounds upon which Dr. Schwarzkopf asserts that "This little meat inspection of ours is merely for a show, whereas Germany's system is for a general purpose?"

The United States law provides that the Secretary of Agriculture shall cause to be inspected all cattle, sheep and hogs, the carcasses or products of which are to be transported and sold for human consumption in any other State or Territory, or the District of Columbia. It provides for the marking or labeling of the carcasses and products of animals "found to be free of disease, and wholesome, sound, and fit for human food;" while to transport or to deliver for transportation from one State into another any carcass or food products of an animal declared unsound or diseased is made unlawful and subject to a heavy

penalty. Further than this, the Secretary of Agriculture is authorized to make such rules and regulations as he may decide to be necessary to prevent the transportation from one State into another of the condemned carcasses or parts of carcasses of inspected animals.

Congress in this act has provided for a vast system of inspection covering meat shipped from one State to another for domestic use, it has authorized the Secretary of Agriculture to adopt any measures he may see fit to prevent the shipment of condemned meat, under which authorization he causes its immediate destruction as soon as condemned; and it has gone about as far as it is possible for it to go under the Federal Constitution to protect our citizens from diseased and unsound meat. What possible excuse or justification is there for the assertion that all of this inspection and all of these precautions are "merely for a show?" And is there any more reason for the assertion that the origin of this domestic system of inspection is to be sought in any German law?" Such claims are too preposterous for consideration.

It is possible in making the assertion that our inspection is due to German law, Dr. Schwarzkopf had in mind the microscopic inspection of pork for trichinæ, and if this were the case, any one can see, by examining the law, how egregiously he is mistaken. The meat inspection law does not provide for a microscopic inspection of pork, and the only animals specifically authorized to be inspected on account of the meat being intended for export, are cattle. The microscopic inspection can only be made under the general authorization to make a post-mortem inspection of the carcasses of all cattle, sheep and hogs which are the subjects of interstate commerce. As Congress gave no special direction for inspecting export pork, the kind of meat which goes to Germany, and did direct an inspection of export beef, which by the way does not go to that country, the reader will have no difficulty in appreciating at its proper weight the influence of the German law in securing our legislation.

Our inspection of meats for domestic consumption is no more

a "commercial undertaking" than is the meat inspection of Germany: and if the German inspection "is for the benefit of a whole nation of 55,000,000 people," ours is no less a benefit to a whole nation of 70,000,000 people. As to the point of the statement that our inspection "is a neat little branch of a government department," while "theirs is a law in itself, and a gigantic system, with a thousand branches running through the whole country," I opine that nothing less than the intricate and mysterious meanderings of the German mind will ever grasp it. Is not the German inspection a branch of a government department, and is not an act of Congress a law in itself? Have we not a gigantic inspection system running through the whole country, a much larger country than Germany, and a country containing at the same time a much greater population and a vastly larger number of animals? We inspected in the United States during the year ending June 30, 1894, not counting microscopical examinations, 12,944,000 head of meat-producing animals at the time of slaughter. How many were inspected under the German national inspection in the same manner and during the same time?

Dr. Schwarzkopf goes on to say: "It is all very well to say we condemn everything that is not sound and ship to Germany only strictly healthy meat, when the carcasses condemned at home are turned loose at our local markets and are considered good enough for our own people. I never have seen so much poor meat in my life than in the Chicago butcher shops, and I hope to see the day when the United States inspection can be enforced all over the country to rectify these evils."

Has there ever been a worse misrepresentation of the Federal meat inspection or a more deliberate attempt to depreciate its value in the eyes of the world than is contained in the above paragraph? If so, I hope some one will point out the author in order that he may receive full credit for his ability to pervert the facts.

It is not true that the carcasses condemned at home are turned loose at our local markets and are considered good

enough for our own people. The condemned carcasses and parts of carcasses are now, and always have been, put in the fertilizer tanks and destroyed as an article of human food.

We have not condemned carcasses on account of trichinæ, it is true, as they have simply been withdrawn from the trade in the case of countries declining to receive pork without a microscopic inspection. The pork from packing houses, which is salted and cooked, has not proved very dangerous in this country, and we have made no pretenses of guaranteeing trichinæ-free pork to our consumers.

The microscopic inspection even in Germany is a delusion, and does not protect from trichinosis as can be very easily shown. There has, consequently, been no special reason for enforcing the destruction of such carcasses in this country until a general microscopic inspection could be made.

The trichinæ inspection is, however, but an insignificant part of the meat inspection system of the United States; it is the one and only part which we were led to undertake by German influence; and it is the only part which can be assailed as being of a commercial nature and not protecting our own people equally with the foreign consumer.

But the fact that there necessarily are weak points about trichina inspection, the one German idea in our system, does not justify in the least the sweeping assertion that the condemned carcasses found in our inspection are turned loose at our local markets. All the hogs as well as the cattle and sheep slaughtered for shipment to other States or foreign countries, are subjected to a rigid ante-mortem and post-mortem inspection, and all the carcasses found diseased and unfit for food on those inspections, are condemned and destroyed. That is the incontestable fact, and Dr. Schwarzkopf's friends will all regret his attempt to obscure and misrepresent it.

What does he mean by telling us in this connection that he has never seen so much poor meat in his life as in the Chicago butcher shops, and that he hopes to see the day when the United States inspection can be enforced all over the country to

rectify these evils? Does he mean to insinuate as one would be likely to infer from his language, that this poor meat was diseased and unwholesome meat, which had been condemned on the Federal inspection and turned loose at the local markets? If so, the statement may be dismissed as incorrect and unworthy of consideration. Does he wish us to understand that the meat was simply lacking in quality, and not produced from diseased animals? If so, he was unfortunate in his selection of language, and the remark has no bearing on the question of meat inspection. Does he refer to meat prepared in abattoirs where animals are killed exclusively for the local trade and where there is of course no Federal inspection? If so, he was nevertheless unfortunate in his language and the remark has no bearing on the subject under discussion.

The facts are that Chicago has an excellent system of Federal inspection. This inspection includes all cattle and hogs slaughtered in abattoirs which do an interstate business, and all meat condemned in these houses is destroyed as a food product. This inspection is intended to protect the consumer from the meat of diseased animals or of those which are not in a proper condition to produce wholesome food. It does not guarantee that the meat is from either young or fat animals. The people of Chicago can obtain inspected meat by demanding it from the retailers; but the United States Government can never go into the slaughter houses which kill exclusively for the local trade and there enforce its inspection. It requires but a slight acquaintance with our form of government to understand that inspection of a local trade comes under the reserved police powers of the States, and that it is unconstitutional for the Federal Government to attempt such inspection until the articles have entered the channels of interstate or foreign commerce. If, therefore, Dr. Schwarzkopf hopes for a more extended Federal inspection in Chicago than now exists, in order that he may not be offended by so much "poor meat" in the butcher shops, his hope will not be shared by patriotic American citizens who love and reverence our form of government, and who are not in

favor of its assuming the duties which properly belong to States and municipalities.

Dr. Schwarzkopf is inclined to deny my statements as to the defects in the German trichina inspection and asserts that they are just as unfair as the reports that were made concerning the American inspection. Let us see.

It is not necessary to depend upon the evidence of the average American tourist who "with characteristic hurry, runs through the schools and institutions of all kinds." Although the doctor may decline to accept the statements of Americans, he certainly will not be so uncomplimentary towards his countrymen as to doubt their specific reports. I find from going over these reports that not less than 908 cases of trichinosis in people occurred in Germany during the thirteen years from 1882 to 1894 inclusive from eating inspected pork. This is more than has ever been reported in the United States from uninspected pork, taking all the records from 1852 to 1894.

Suppose we allow the Germans themselves to tell us why their inspected pork has produced so much trichinosis.

March 30, 1889, the Chief of Police of Berlin issued a warning to the public against eating raw pork, explaining that pork reached the market which had either not been inspected at all, or had been only superficially examined.

Dr. H. Wasserfuhr says (Hygienische Rundschau, Jg. No. 3, pp. 81-83): "It is well known, however, that the trichina inspection fulfills its purpose very inadequately for the majority of cases of trichinosis are due to eating raw or rare pork, which has been declared free from trichina by the official microscopic examination."

Drs. J. Esser and W. Schutz report (Archir f. wiss. u. praht. Thierheilkunde XX, No. 1): "The examination for trichina in the Johannisburg district is according to the report of District Veterinarian Kleinpaul, very incompletely carried out. As an example of this a case is mentioned where a trichina-examiner pronounced a trichinous carcass as free from the parasites. Eight persons were infected from eating the meat of this car-

cass. The examiner was indicted, but when questioned in court it was shown that he had absolutely no conception of trichina-examination. His examination had been very superficial, but he had followed exactly the directions of his instructor, a district health officer. He was therefore acquitted."

According to the report of District Veterinarian Krueger, a meat inspector in the district of Pr. Eylau was imprisoned for four months because he had not complied with the statutes and personally taken pieces of meat from a hog which was afterwards determined to be trichinous.

District Veterinarian Frauenholz reports that since the beginning of the trichina inspection in 1875 in the district of Brieg, several hundred thousand hogs had been examined microscopically, but not a single trichinous carcass had yet been discovered. This extraordinary result appears to have aroused a suspicion even in the German mind.

In an article in the Virteljahrschrift f. öff. Gesundh., 1885, XVII, pp. 98-105, the following is recorded :

"Dr. Rupprecht (p. 98) states that the reason trichinosis breaks out in spite of the inspection is that the inspection is not thoroughly or intelligently carried out. Some of the inspectors have poor eyesight, and others imperfect microscopes.

"Kreisphysicus Dr. Rapmund (p. 99) says the carrying out of this sanitary law is left to persons who in many cases do not possess the necessary accuracy to fill this important office. It is really astounding, he says, that the State should have so much latitude in the choice, training and control of the inspectors and not impose restrictions at least equal to those required for midwives.

"Dr. Schwarz (p. 100) says of the two recent epidemics in Cologne, it has been proven that one arose from a carcass which had been condemned, but which was placed on the market through the carelessness of a police officer ; the other through the uncertainty of an inspector who was more than sixty years old and not sufficiently trained.

"Ministerialrath Dr. Wasserfuhr (p. 102) said the trichina in-

spection was an untrustworthy measure against trichinosis. This is because the inspection in most cases is only superficially carried out on a few muscles by inexperienced and not even careful persons."

Dr. Stüler says (Zeitschr. f. Medicinal-Beamte, 1889, pp. 265): "Let us consider first the class of people from which the trichina inspectors are taken. In our Kreise, there were according to official statistics for 1887, 168 official microscopists to examine 24,487 swine. Of this number 58 belonged to the better classes or to trade, in which nimble fingers are necessary, or to the female sex; 35 belonged to the heavier trades, while 58 belonged to trades in which the heaviest work must be performed. Of 17 no details could be obtained. I have, myself, educated 50 of these persons as inspectors, and I know, therefore, from experience how difficult it is to teach the clumsy fingers of a stone-layer or of a blacksmith how to make a preparation and how to use the microscope; and also how hard it is to drum into these heads, unaccustomed to study as they have been for years, the absolutely necessary instruction. It required an inconceivable amount of patience."

In the Amtshauptmannschaft, Dresden, a microscopist was obliged to resign because he was not able to find a single trichina in a preparation which contained them. This was because his microscope was so dirty that it was possible to scrape off crusts with a knife. The lenses were all smeared and his bookkeeping was grossly careless. (XXIII Jahresbericht ü. d. Medicinalwesen in Königreiche Sachsen, 1891-1892, p. 91.)

In the Bezirk of Oschatz, the microscopes were for the greater part in good condition; some of them were dirty. In one case the adjustment screw was so rusty, the mirror so dirty and the lenses so obscured by dirt and fat that the instrument was totally useless. (XII Jarhesbericht, u. s. w. Sachsen 1890-1891, p. 127.)

It was stated that the necessity of the rule requiring an inspection of the microscopes was shown by the fact that in Querfurter Kreise, of 124 instruments, 7 were so completely useless that it was impossible to find trichina with them. In Merseburg

Kreise one-fourth of the instruments, and in Kreise Weissenfels 46 out of 125 microscopes, were equally useless because of neglect in cleaning the lenses and slides.

Some of the microscopists who had been serving resigned out of fear of the examination, while five of them were unable to recognize the trichina in a preparation containing these parasites. (Eulenberg H., Vierteljahrschrift f. gerichtliche Med. ü. off. Sanitätswesen, XXX, p. 178, 1877-1879.)

In one case it was proven that the butcher himself had cut out the samples, and had made the entry "trichinenfrei" in the inspection book. The result was an outbreak of trichinosis. (XX Jahresb. Sachsen, 1888-1800, p. 99.)

In Glauchau an inspector took samples, stamped the carcass as passed, and then went home to make the examination. He had always been in the habit of examining the specimens after passing the carcasses. (XYI. Jahresb. Sachsen, 1889-1891, p. 99.) In Germany the inspectors are paid a stated sum for each carcass inspected, and some of them apparently conclude that the manipulation of the specimens is the main consideration, and whether they are able to see through their microscopes, or whether the carcass has been passed and consumed before the specimens are examined are matters of no consequence.

An interesting case occurred in which eight persons were affected with trichinosis. The meat in the house was seized and found to contain the parasites. The woman of the house, a widow, begged for the meat and it was given back to her. She at once sold it to a butcher. (VIII. Jahresb. Sachsen, 1876-1878, p. 47.)

The above references, which could be added to if necessary, are sufficient to establish all that I have said about the German trichina inspection. For obvious reasons, I shall not give the name of the gentleman who was referred to in my remarks at Philadelphia as authority for the condition of some of the microscopes at Berlin. From other trustworthy sources of information, I learn that many of the microscopists that are unfitted by previous habits and calling for careful work of this character.

I do not bring out these facts simply because it affords me an exquisite pleasure to discredit the German inspection, as Dr. Schwarzkopf tried to make me assert, by garbling the language of my previous letter, but because it is a real pleasure to demonstrate to people who have a propensity for throwing stones that their own edifice is constructed largely of glass. For the modest, untiring, devoted, generous German scientists, of whom there are so many, I have the greatest respect and admiration; but for that other class of critical, bumptious, arrogant, narrow-minded individuals who have made themselves offensive by their effusive and unscrupulous efforts to convince the world that our inspection is a farce, and our science a delusion, I have nothing of a complimentary character to say.

My views on veterinary education were given in a former letter, and there is no need for restating them in this. I am as anxious for higher education as any one, and I think I know as well as any member of our profession, both of what the higher education consists, and what are the most certain and practical methods of reaching it. When the gentlemen who are so fond of exploiting their views on this subject, successfully enforce proper entrance examinations, offer a curriculum and supply a faculty worthy of the ideal position which they assume, there will be no disposition to withhold full credit; but for the present, while we may fairly be permitted to judge the accuracy of the teaching by the accuracy, or inaccuracy, of the deliberate and written statements of the professors, each one of us may have without reproach his own opinions as to the value of the extended course which they advocate.

If Dr. Schwarzkopf had been consistent, he would have gone back, after writing his last paragraph, in which he expresses his "inner feeling that a great wrong, a wicked offense is being perpetrated against our profession by some men of little education and less character in keeping up low grade schools," and avoided committing an offense of the same character by expunging the misstatements in the first part of his letter concerning the United States Meat Inspection. The veterinary profession

of this country is on trial at this time in the meat inspection service to a greater extent than in any other line of its work, and any one who unnecessarily, and without cause or reason casts reproach upon this inspection, which is being put entirely into the hands of veterinarians, is doing more to wrong and injure the profession than are the people at whom were aimed the bitter words that have just been quoted.

COAL TAR AND SOME OF ITS MEDICINAL PRODUCTS.

By W. L. WEST, SR.

A paper read before the Veterinary Medical Society, Ontario Veterinary College, Toronto, Can.

MR. PRESIDENT AND FELLOW STUDENTS:—To write a complete description of coal tar and its products would require the outlay of considerable time, and a large volume would result; my purpose this evening is but to bring to your notice a few of its compounds which I have thought most useful to us as veterinarians.

When coal tar is subjected to destructive or dry distillation, besides illuminating gas and coke, there are formed numerous other substances, varying in amount and character according to the quality of the coal, and the manner of its decomposition. These substances are volatile, boiling at varying temperatures, and originally condensed into a thick black liquid, the familiar coal tar. Formerly this was a waste product, and a source of considerable loss and trouble to the gas manufacturer. It is now, through the discoveries of chemists, a most valuable bye-product, and a source of an infinite series of compounds of interest in the arts, science and medicine.

Among the latter, which are especially applicable in veterinary practice, and which I have to mention, are naphthalene, methyl-napthalene, diplinec retene, which are solids. Benzine, toluene, mesitylene are liquids, while among the acid compounds

we have phenol, ortho-cresol, para-cresol, meta-cresol, phloral, rosalic acid and creosote.

Phenol-Phenylic Alcohol-Carbolic Acid is one of the most useful and widely known products of coal tar. It was discovered and isolated in 1834 by Rungé, who gave it its name, but the honor of introducing it to the profession belongs to Calvert. Of its value in medicine, or more strictly speaking, surgery, you are of course well aware.

Naphthalene occurs as a white shining crystalline solid, melting at 176° F. Boils at 423° F.; is soluble in ether, alcohol, chloroform, and the oils, insoluble in water, but imparts its taste and odor to water in which it has been boiled for some time. Naphthalene is toxic to all fungi and micro-organisms, and for this reason it is a valuable antiseptic; manufactured now on a very large scale, it is consequently cheap, a point of considerable importance in our practice. It is of value in skin diseases, especially those of a parasitic nature, such as mange, scabies, fanus, etc.; as an expectorant in bronchitis and other respiratory diseases it has proven very useful. Dose for horse, ʒ ss to ʒ i.

Naphthol-B. Naphthol occurs in coal tar, but is usually prepared by direct method from naphthalene. It is a yellowish white powder, possessing the well-known phenol odor and pungent taste. It is permanent in the air, and soluble in 1,000 parts of cold and seventy-five parts of boiling water and soluble in all parts of alcohol, ether and oil. Its antiseptic and physiological actions were discovered and investigated by Bouchard, who found that a strength of 1-3,000 solution was sufficient to arrest the growth of pathogenic cultures in an agar tube, and as it is practically non-poisonous (the toxic dose for a man being ten ounces) is, I think, a valuable remedy, which would be useful in diarrhœa, dysentery and influenza, where the alimentary track is involved. Kaposi recommends a solution in oil of one to 250 as highly useful in conjunctivitis, laryngitis, etc. In man it has been used with much success in la grippe, and in cases of influenza in our patients, might also prove of value, being ad-

ministered by intertrachial injections of a one to 1,000 solution in water. Dose for horse, grains 15 to 3 i.

Salol-Salicylic Ether of Phenol.—This was first introduced to the profession by Dr. Salili, of Basel. It occurs in white shining powder, tasteless, with a faint aromatic odor. It is soluble in alcohol, ether, and oils, but insoluble in water. It is analgesic, antipyretic, but as an antirheumatic; it is neither so safe or so effectual as salicylic acid on account of its non-irritating properties, it forms a useful external dressing. Dose for horse, 3 iv. 3 vii.

Creolin.—An emulsion of cresol obtained by means of resin soap; it was first experimented with by Esmarch, who states that as a germicide, it is more valuable than carbolic acid, excepting in the case of bacillus anthracis creolin, it is said to be non-poisonous, but this must not be taken in its widest sense, as cases of poisoning have occurred by its careless and indiscriminate use, but compared to most antiseptics it is well-nigh noxious. Its actions and uses internally are only beginning to be appreciated. It prevents too rapid fermentation and is useful in tympanitis, flatulent colic, acute indigestion, etc., and as a vermicide; either in drench or as an enema it is very certain and speedy in its results. It is one of the most useful agents for rendering instruments aseptic, without corroding the metal, as so many antiseptics do. Mixed with iodoform, it destroys the odor without affecting its value. Dose for horse, 3 ii. 3 vi.

Lysol.—This is prepared by dissolving the fraction of coal tar which boils between 190° C. to 200° C. in fat, and subsequently emulsifying with alcohol. It is a clear oily liquid, with a feeble aromatic odor, and contains 50% cresols. Is miscible with water, alcohol, ether, and oils. Lysol was first introduced by Dr. Gerlach, in June, 1891. After elaborate research he found that both in mixed masses and pure culture of pathogenic organisms, it proved a better germicide than carbolic acid or creolin. A 1% solution has a soapy feeling and is useful for rendering the hands aseptic without injury. It does not affect steel instruments but will ruin celluloid handles. Wounds may

be sprayed with a 3% solution, but a weaker one would answer all purposes. It has no poisonous properties.

There are very many more useful medicinal compounds derived from coal tar, but I think those named will suffice for the present.

HYDROPHOBIA.

By J. H. ADAMSON, D.V.S., Charlottesville, Va.

(Read before the Virginia State Veterinary Medical Association.)

GENTLEMEN:—The subject of my essay, "Hydrophobia" or "Rabies," is not chosen with the intention or assumption on my part of reflecting any new or extra light upon this important and momentous question, but simply to invoke, stimulate, and invite discussion in this circle of educated veterinarians; and I especially ask our brothers in the medical profession, if any are present with us to-day, to join us in our discourse. I therefore trust, that at the close of my reading, the members of this society who are gathered here for the purpose of advancing our claims upon the laity at large, and for the benefit and instruction of ourselves collectively, will indulge in good spirit in our open councils of discussion, and endeavor by all means within their power, to throw the search-light of their recent learning into the pros and cons of this paper, which attempts to deal with this somewhat imperfectly understood malady, as it appears before us at this present day.

The compound word "hydrophobia," as analyzed by our Greek and Latin masters, is a term expressing fear or dread of water. Rabies, rabis, means I rave, to rave, and when used to mark or characterize this distressing and terrible disease, is incorrect, erroneous, and misleading in every respect; so far as the word is capable of conveying the idea that any animal or man has a dread of water or any other liquid containing water, as any animal suffering from hydrophobia will drink and even wallow in water, not only willingly, but greedily, to the very last.

Hydrophobia is a disease originating in the canine, and less frequently in the feline. The poison or ptomaine effects are recognized by its morbid action and results in the animal economy. Rabies, or as it is erroneously called, hydrophobia, so far as the lower animals are concerned, is a disease which has been known from very early times, in fact centuries ago, but just how long the world has been cognizant of the fact, is not clear to us, and I am confident in asserting that it has taxed severely the medical and veterinary clinical sagacity, ever since its advent, throughout all generations up to the present era.

Plutarch asserts that, according to Athenordorus, it was first discovered in mankind in the days of Asclepiadea, the descendants of the God of Medicine, Esenlapins, by his sons Podalirius and Macheon, who spread through Greece and Asia Minor as an order of priests, prophets, and physicians, preserving the results of their medical experience acquired in the temples as a hereditary sect. Hydrophobia is also alluded to in the works of Aristotle, Xenophon, Virgil, Horace, Ovid, Celsus, Galen, and subsequently investigations were published by Boerhaave, Van Swieten, John Hunter, Majendie, Breschet, Virchow, Reder, Hertwig, Pasteur, Klebbs, Koch, Sternberg, Williams, Fleuring, Meynell, and many other notable men of our day.

In 1271 wolves were known to be affected with rabies in Franconia. In 1590 rabies prevailed in Spain, also in the same year at Monthelliard. During the early part of the century rabies was very prevalent, both in this country and in Europe. In 1869 there was a great outbreak in the north of England, and a great scare was caused among the kennels of fox hounds, and a vast number of dogs were destroyed to arrest the epidemic, also again, in 1876 and 1878, in the southern counties of England, where the lowlands seem to favor its propagation. It has occurred in every State in this Union at some time or another during the present century, but fortunately never to any alarming extent.

Causes of Rabies.—Opinions are divided at this date, as to the spontaneity of the origin of rabies. Some writers maintain

that even in the dog and other allied quadrupeds the malady never originates except by inoculation, whilst others assert that it originates spontaneously in the dog even in this country. Sternberg, Klebbs and Fleuring are positive that rabies is capable of spontaneous origin in the canine only, and that once generated in the dog it is transmissible by inoculation to every warm-blooded animal and bird.

Although it is possible for rabies to appear independently of contagion, it was at one time maintained that it never occurred in the bitch, except it developed by contagion, but this idea does not hold good, although it has been proven that it is far less frequent in females than in males.

Hydrophobia is a specific blood disease, due to some germ that has not as yet been discovered. It has not been isolated or cultivated, but sufficient proof has been found of its presence in the blood of the affected animals by the process of inoculation. It is known beyond doubt that a specific virus is developed in the saliva of all affected animals, and implanted through a wound or abrasion in the epidermis, or mucous membrane, thus conveying the disease to other animals or man.

It is like all other epizootic and contagious diseases; its prevalence is liable to many fluctuations, at times prevailing to an alarming extent, whilst at long periods the disease is almost unheard of. That its propagation is mostly due to inoculation, cannot be disputed, but its sources of spontaneous origin, and how produced, or where obtained by the victim, are circumstances which as yet are hidden in obscurity. The influence of climate, season of year, food, hunger, thirst, or domestication do not produce rabies. The evidence in support of the opinion respecting the non-gratification of sexual desire, is not without doubt, although it points strongly to the conclusion that sexual desire ungratified, as well as severe pain, prove to be exciting causes of this disease. Solitary confinement has also been advanced as an exciting cause, and the idea that hot weather is very productive of rabies is now entirely dispelled, and shattered to shreds, as the following tabulated report arranged by

that eminent professor, St. Cyr, of the Lyons Veterinary Institute, will show. It plainly states that rabies is even more prevalent in or during the temperate months, than those of extreme heat or cold. St. Cyr says that during the months of

	Rabid.	*Suspected.*	*Total Admitted in Infirmary.*
January, 1865.....	12	2	14
February, "	14	4	18
March, "	16	11	27
April, "	14	20	34
May, "	12	14	26
June, "	6	14	20
July, "	2	8	10
August, "	4	3	4
September, "	7	3	4
October, "	1	1	0
November, "	3	0	0
December, "	1	1	2
Total.....	92	81	159

Pathology and Symptoms of Rabies.—Three circumstances in the pathology of rabies are worthy of notice, namely:

First.—That the period of latency, or incubation, after inoculation, is very indefinite, ranging from fourteen days to several years, and that it varies in different animals.

Second.—That inoculation does not always produce the disease, as one-fourth of inoculated animals escape.

Third.—That the disease is transmissible to man, mammifers and birds, by the usual media at a later period than twenty-four hours after the death of a rabid animal, or after cadaveric rigidity (*rigor mortis*) has completely invaded the body.

As before stated, heat and cold do not favor the generation of rabies, the disease is hardly known on the South American continent, it is entirely unknown in Egypt, and Syria has never been visited by it. Greenland, also, is entirely exempt from this scourge. M. Andry, the French writer on this subject, says that January and August, the hottest and coldest months, furnish the fewest cases.

The symptoms of canine madness are very much the same in all cases, though varying somewhat in their manifestations. The first and most marked symptom is a change of disposition and temper so that the naturally good-tempered dog becomes sullen, morose, and snappish, and those which are usually kind and fondling, are changed in their manner to a state of reserve and extreme shyness, and seek retirement. Sometimes the change is so great, that the usually shy dog becomes very bold, but this is not nearly so common as the opposite extreme. Generally the mad dog shows a warning of latent disease developing, by this change of manner, for several days before it breaks forth with severity. The next symptom is the countenance, which becomes anxious and appealing, the eyes become blood-shot, and singularly bright and sparkling, with a slight tendency to distorted vision, or squinting is apparent, and such alteration in the usual appearance of the eyes and countenance are generally followed by mischievous propensities possessed by the animal in health. An array of symptoms now begin to establish quickly one upon another, until a lamentable spectacle is on view. The appetite suddenly becomes abominably depraved, lapping the urine, and licking around places where urine has been recently deposited by other dogs or himself. The animal will also, at this stage, devour his own, other dogs', or human excrement with a decided ravenous relish; he will also eat and swallow pieces of wood, stones, leather, rope, cloth, coal, and even pieces of iron, lead, or any other mineral, etc., small enough for deglutition; in fact, any kind of filth or dirt that comes in his way is swallowed with avidity.

This symptom alone is characteristic of hydrophobia, and is amply sufficient to justify any man in giving his opinion to this effect, so says Professor Lagarris, Pasteur Institute, Chicago, Ill., who also adds that on making post-mortems on animals supposed to have been affected with rabies, the contents of the stomach always play an important part in his decision, and always where lesions of rabies are found, the stomach is partly filled with stones, gravel, pieces of wood, and other indigestible

material. The next important symptom is one which is also considered most demonstrative, viz., an insatiable thirst, a pitiable craving for water or any other liquid, which is swallowed eagerly, the animal pushing his head, over muzzle, up to the eyes into the vessel containing the liquid, in his frantic attempts to quench his burning thirst. He will wallow through, and even swim across ponds or streams of water, throughout the whole stage of the game.

The animal now becomes exceedingly restless and irritable; he wanders aimlessly around from place to place, having apparently a strong desire to do something, and not caring what, so that he is not quiet, seems to be afraid of being left alone, appears to apprehend some coming danger, will look wistfully and anxiously up into his master's face, as if beseeching his aid and protection, then he will suddenly fall down and lick his owner's feet, imploring him, as it were, to help him out of some impending danger, after which he will slowly rise and wander around the room, never walking in a straight line, but in zig-zag fashion, will crowd around behind chairs or other articles of furniture, and attempt to pass between them and the wall, knocking them over in his hurry. If he is confined by a chain he attempts to gnaw and chew it to pieces, if by a door he vents his fury on that. In this state he knows not the sensation of ordinary pain, as he will bite a red-hot poker if presented to him, exactly as if it were a cold one. In drinking, he will usually upset the stock of fluid, in his great hurry to imbibe. He will commence barking as if angry, at the approach of some stranger, then suddenly changing to a voice of joy and ecstacy; then he will whine as if asking for something, then change again into a melancholy, dismal howl, as if lost, or that approaching trouble was at hand; then an interval of complete naturalness will pervade for a few minutes, and the same symptoms will return with increased vigor, until the whole muscular system is wrapped in hideous, trismatic convulsions, which, however, soon disappear, and the howling commences again, which is readily recognized by an expert as that of a mad dog.

If allowed liberty, the rabid dog always seeks seclusion as the disease advances. He will leave his home and go off in a perfectly straight line along the street. The gait is peculiar, and characteristic of the rabid dog, and nothing else. It may be described as a shuffling motion, a mixture between a pacing and trotting movement, commonly known as the fox-trot. He holds his head in a perfectly straight line with the body, and looks neither to the right nor to the left. He will not go one inch out of his way to do any mischief, and will often pass through crowds of people without even thinking of biting them, and even if pursued by cries and hootings he takes no notice until he is hurt bodily, then he will wreak his vengeance on the offender, or anything else that comes in his way. But more frequently he will endeavor to escape his assailants, and reach solitude, where, once by himself, he will snap at imaginary objects, and will only attack real ones if placed in his way. This snapping at the empty air is also very characteristic.

The prevailing desire to roam and wander away, seems to me to be an instinctive attempt to get rid of the disease by muscular action, as rabies is spontaneous only in non-perspiring animals.

(To be Continued.)

TREATMENT OF OSSIFIC DISEASES OF THE JOINTS BY HYPODERMIC INJECTIONS.

By Junius H. Wattles, D.V.S.

(Read before the Missouri Valley Veterinary Association at Atchison, Kan.)

While I was attending college as a student, the question of treating bone spavin by some other method than the actual cautery, was discussed by a gentleman who was visiting the college, and myself. We reasoned that many valuable animals were disfigured by the fireing iron, and that if the same result could be obtained by some other method, it would be more satisfactory to both patron and practitioner.

The question to be answered was: Can a remedy or agent of any sort be injected into an articulation, that will produce an acute artificial inflammation, with the rapid deposit of bone cells necessary to form an anchylosis, and that will not cause suppuration or some other complication or condition, which will be worse than the original disease? The points in question were considered by us, with all of the misgivings and fear of ridicule that a student attending college, and a gentleman in practice who had never attended any veterinary institution could have, as we felt that we were guilty of encroaching upon some of the traditions of the profession. The result was, however, that we determined to put in practice the theories which were evolved at that time, and I have done so with entire satisfaction to my patrons and myself.

The condition we know as spavin, is in my opinion identical with the condition known as osteo-arthritis in man, and nearly the same general pathology occurs in both cases, the result desired, however, is not the same, as in man motion is usually insisted upon even in cases where the articular cartilage is destroyed, to prevent anchylosis, while in our cases we desire complete anchylosis in as short a time as possible, with the exostosis reducec to a minimum.

Looking upon the process of repair that takes place in spavin as being identical with the process of repair that takes place in the repair of a fracture of bone, and that in both cases that absolute immobility is desired for the purpose of producing anchylosis, I have used plaster of Paris or starch bandages, and by readjusting them as the swelling subsided or they became loose from any cause, reduced the motion in a joint very materially, a plan that I have followed with advantage in those cases where it was impossible to turn the animal out to grass after operating.

It is necessary to give a brief resume ot the general pathology of osteo-arthritis, in order that my reasons for treating spavin hypodermically may be made clearer.

There is first the injury whatever it may be, producing in

regular order congestion and inflammation, followed by exudation into the articulation, with attendant maceration and destruction of the articular cartilages. If from any cause this exudate is not absorbed, a fibrous organization takes place, preventing the union of the necessary reparative bone cells, and delaying anchylosis; but should this exudate be rapidly absorbed, it will allow the bone cells to develop faster and accumulate in a much smaller space, and thus reduce the size of the exostosis that is formed, as well as making it a compact mass, instead of the irregular porous bone tumor, with its numerous openings and channels, in which this exudate has organized and become a part of that we usually find in these cases.

Bone spavin, ringbone, and splint, have been treated by me since March, 1886, by the hypodermic injection of tincture of iodine. My method has been as follows: I confine the animal as required; clip away the hair and wash the part with hot water; use an ordinary syringe with a large needle, inserting the needle into the tumor, usually at its upper part, and loosening up the structures with its point, withdrawing the needle slightly and injecting about one drachm of the tincture, making several insertions of the needle in different parts of the enlargement and injecting about a drachm at each insertion, taking care not to enter large blood-vessels. The patient is kept in the stable for a week or ten days, and then turned out from six weeks to three months. A second operation is very rarely necessary, and unless the swelling becomes excessive immediately after the operation, no after treatment of any sort is required. No bad results of any kind have ever followed this method of treating this class of diseases at my hands. Complete anchylosis and termination of the lameness, in both spavin and ringbone, have always been obtained. There has never been the slightest suppuration. The enlargement does not increase materially in size, but appears to decrease, when repair is in progress, by the filling in below the enlargement with new tissue. I can cite individual cases, but it is unnecessary, as you have every opportunity to test its efficacy.

The stimulant and re-absorbent action of iodine is so well known that it requires but passing mention. The beneficial results obtained by the use of iodine hypodermically in the cases mentioned, is the result of both actions. By the stimulation of a low grade of inflammation, into an active form, it determines the rapid increase and multiplication of the reparative bone cells, and by its re-absorbent action it resolves the organized exudate into a liquified mass that is readily taken up and carried away from the part. From a general, diffused inflammation of the region, it becomes a localized inflammation, that is confined to the place desired.

I do not wish to be quoted as saying that *all* cases of spavin, ringbone, or splint can be cured by this method, but I do assert positively, that any one of these which are curable by any other method, may be cured quicker and with less deformity or blemish remaining, by the hypodermic injection of iodine than any other method that I have any knowledge of.

IS TUBERCULIN, AS ORDINARILY USED, TOO DELICATE A TEST? A REMEDY SUGGESTED.

By GEORGE N. KINNELL, M.R.C.V.S., Pittsfield, Mass.

Among careful men who have had the greatest experience, it is often a subject of serious and anxious thought whether or not the indiscriminate slaughter of animals condemned by the tuberculin test is advisable or even justifiable.

There is probably no practitioner, of any considerable experience with the agent, who has not at times quailed at his work; and thought with feelings of regret and misgiving of the many comparatively healthy creatures on which it has been his lot to pass the death sentence.

Personally I believe in thorough eradication of each and every case of tuberculosis, but there are many others who will welcome a more modified and less drastic method of handling the trouble so long as it holds out fair assurance of ultimately

getting the disease under control. During the past fifteen months I have had considerable experience in testing with comparative doses of tuberculin. The result has been that my belief has been shaken seriously in regard to some of the commonly accepted theories about the action of this substance, but I have also discovered what I think may be of practical and monetary importance in getting under control and finally stamping out the disease tuberculosis.

Before going further let me explain that when I speak of tuberculin I refer to Tibbertz Tuberculinum Kochii. By a small dose I mean two thirds of a minim ; a large dose, the ordinary one of from three to five minims. I will begin by stating what I believe to be the relative merits of testing with small and large doses and then endeavor to show grounds for what I say.

1. A small dose of tuberculin will detect the worst and every dangerous case in a herd. I know of only one exception to this rule.

2. A small dose will cause reaction in very advanced cases, where a large dose fails to react or at most only causes an attack of extreme prostration without any elevation in temperature.

3. A small dose will not, as a rule, cause reaction in the earliest stages or in cases that are but slightly advanced.

4. A small dose will not cause reaction in cases that have been slightly diseased and that may be said to have recovered.

5. While small doses will not at once detect every case in a herd, yet by annual or semi-annual tests dangerous cases can be detected as they develop, and this coupled with proper sanitary and hygienic regimen ought in time to result in the practical extinction of the disease.

It is a commonly accepted belief that when a badly diseased subject fails to react it is because her system is already so saturated with the poison that the addition of a little more does not make any serious difference. This must surely be a mistake. I have found it time and again that a dose of two-thirds minim (Koch's) will cause a considerable reaction in cows that are ex-

tremely diseased, and further I have only once known it to fail in doing so. And again if the commonly accepted belief is the right one, why is it that slight cases do not respond to a small dose, but require from four to six times a larger dose to get the reaction? I think the amount of reaction obtained depends on an entirely different condition.

It has been with me a subject of frequent notice that the highest reactions have been obtained from fat and plethoric animals, some of them badly diseased, others but slightly. Then again the cases in which the lowest reactions have been noticed have been noticed have been in creatures thin and emaciated, and whose vital energy has been at the lowest ebb, some of them slightly diseased, others extremely bad. Testing the latter varieties I can only compare them to a man attempting to light a stove having but little fuel in it, and the chimney stuffed with soot. There is not enough fat on the creatures to make a decent fire of, nor sufficient vital energy to cause draught enough to burn up what is there. In such cases a heavy dose will only snuff the candle out and leave us still in the dark.

Since January, 1894, I have tested in all twenty-three herds of cattle comprising a total of 415 heads. Here are the tests and results in tabulated form:

Herds tested with two-third mimim	11	
Total number of animals	180	
Reacted	40	
Slaughtered	33	—All diseased.
Not slaughtered	7	
Killed on suspicion	7	
Found diseased	2	—Very slight.
Found healthy	5	

Tested with from two to five minims (Koch's) and with two cc. Bureau tuberculin:

Number of herds	12	
Total number of animals	235	
Reacted	51	
Have been slaughtered	36	—All diseased.
To be slaughtered later	15	
Slaughtered on suspicion	3	

Diseased	1—Slight.
Healthy	2
Did not react, but slaughtered	3—Extremely bad.
Did not react, but died a week later	1—Extremely bad.

As illustrating the different effects of small and large doses on animals in different stages of disease, I ask careful attention to the following chart. It is only an example, on a small scale, of what has been my experience generally:

DR. HENRY COLT HERD, PITTSFIELD, MASS. TESTED JUNE 5, 1894.

	NORMAL.						
No. OF COW.	12 P. M.	7 A. M.	11 A. M.	2 P. M.	4 P. M.	6 P. M.	
1	102						Not tested. Had calved that day.
2	103	$103\frac{4}{5}$	102	$101\frac{3}{5}$	$101\frac{3}{5}$	$101\frac{3}{5}$	
3	$102\frac{1}{5}$	103	$106\frac{1}{5}$	$106\frac{3}{5}$	106	$105\frac{3}{5}$	Great enlargement bronchial and mediastinal glands; abscesses both lungs.
		$100\frac{1}{5}$	$100\frac{3}{5}$	$100\frac{2}{5}$	$100\frac{4}{5}$	100	
4	100						
5	101	101	102	$103\frac{2}{5}$	$102\frac{2}{5}$	$102\frac{2}{3}$	Slightly diseased, lungs or liver.
6	$101\frac{2}{5}$	$101\frac{4}{5}$	$102\frac{1}{5}$	$104\frac{2}{5}$	$104\frac{1}{5}$	$103\frac{1}{5}$	Had calved six days before.
7	not tested.						

Dose, two-thirds of a minim (Koch's).

TESTED JUNE 21, 1894.

	NORMAL.					
No. OF COW.	8 A. M.	4 P. M.	6 P. M.	8 P. M.	10 P. M.	
1	$101\frac{2}{5}$	$101\frac{2}{5}$	$102\frac{1}{5}$	$101\frac{3}{5}$	101	
6	$101\frac{1}{5}$	$102\frac{3}{5}$	105	$105\frac{2}{5}$	$104\frac{1}{5}$	Disease both lungs and bronchial glands; posterior third right lung consolidated; section presents appearance of typical case of recovered contagious pleuro-pneumonia; large abscess on liver. A bad case.

Dose, two-thirds of a minim (Koch's).

TESTED JAN. 6, 1895.

	NORMAL.					
No. OF COW.	10.30 P. M.	8.30 A.M.	10.30 A M	12.30 P M	2 P. M.	
1	$100\frac{2}{5}$	$106\frac{1}{5}$	$105\frac{4}{5}$	$104\frac{4}{5}$		Slight enlargement bronchial glands, dried up and calcareous.
2	$101\frac{4}{5}$	$105\frac{1}{5}$	$107\frac{2}{5}$	$106\frac{4}{5}$		Bronchial glands slightly diseased, dried up caseous condition, milliary tuberculosis of liver.
4	$100\frac{3}{5}$	$102\frac{3}{5}$	$104\frac{1}{5}$	$102\frac{3}{5}$		Glands slightly diseased, caseous nodule on right lung size of a hazel-nut.
7	$101\frac{2}{5}$	102	$102\frac{4}{5}$	$102\frac{3}{5}$	$101\frac{2}{5}$	

Dose, three (3) minims (Koch's).

It will at once be noticed that cows 3 and 6 readily responded to a small dose of the agent, had a high elevation of

temperature and were found very extensively diseased, while cow 5 did not respond either so quickly or so much and yet was only slightly diseased.

Again cows 1, 2 and 4 did not respond at all to a small dose, but when tested with a large dose they responded quickly and very decidedly, yet the lesions were but slight and in every case were of long standing. Cow 4 was fourteen years old. The bronchial glands in this cow and in cow 1, were enlarged to the size of a hen's egg, the caseous pus they contained was very much dried up, and in the case of cow one was so thoroughly impregnated with calcareous deposit as to make it a difficult matter to cut it with a sharp knife.

There is one clinical feature to be noticed in testing with small doses, a feature which was pointed out to me by Dr. Cooper Curtice, who examined all my small dose charts, and that is that the reaction does not set in so early by four or five hours as it does when larger doses are used. Consequently it is necessary to continue taking temperatures four or five hours longer than is ordinarily required when the larger dose is used.

There is one case of an animal very badly diseased which did not react to a small dose, but this creature had twice previously been tested with full doses, first with a tuberculin preparation sold by Metcalf, a few weeks later with 2 cc. Bureau tuberculin and five days later with one mimim of Koch's tuberculin. It was noticed that after each of the first two tests the animal was much prostrated, the breathing accelerated and the appetite impaired, from which she took from a week to ten days to recover.

I am frequently asked to explain how I first came to use such an unusually small dose of tuberculin. The discovery was the result of a sheer accident. In the January, 1894, number of the *Veterinary Magazine*, there is an original article by Dr. A. E. Conrow, entitled "Tuberculin as a Diagnostic Agent." He says his method is similar to that used by Dr. Pearson. After details as to the preparation of tuberculin, he says: "Then with sterilized hypodermic syringe I inject 0.2 to 0.35 cc. of the ten per cent. solution regulating the amount by the size and condi-

tion of the animal." Roughly speaking, this is from 3⅓ to 5⅓ minims. The solution being a ten per cent. one, gives approximately a dose of from one-third of a minim to one-half of a minim of tuberculin. This article I took as my authority and guide in making my first test, and as a matter of some interest I subjoin the chart of the herd with post-mortem notes. The autopsies were made in the presence of Dr. M. O'Connel, State Commissioner, the Pittsfield Board of Health and myself.

Shortly after this I met Dr. Pearson, and communicated with Dr. Conrow, and from them learned that the dose they use is 0.2 to 0.35 cc. of tuberculin. The statement that they used that amount of a ten per cent. solution was a typographical error.

W. F. MELTON HERD (DURHAM COWS), PITTSFIELD, MASS. TESTED FEB. 6, 1894.

	NORMAL.						
No. of Cow.	10 A. M.	5 P. M.	10 P. M.	2 A. M.	Feb. 7.		
88	99⅖	100⅖	102⅖	105	Matured Cows.	Slaughtered.	Diseased.
Blank.	102	101⅖	103⅕	102⅖		"	"
108	101	101⅖	103⅖	103⅖		"	"
101	99¼	101⅖	102½	103½		"	"
90	100⅖	102½	104⅖	106		"	"
77	100⅖	101⅖	103⅖	102			
44	100	101	100⅖	101¼		"	"
94	99⅖	101	101⅖	103⅖		"	"
89	100⅖	101⅖	104	105			
24	99⅖	100¾	100⅖	100		"	Not Diseased.
103	98⅘	100¾	101	101			
117	99	101½	101	101⅞		"	Diseased.
112	99⅖	102¾	104	104			
34	101	101⅞	103	105			
131	101	101½	101⅗	101⅗	Yearlings.		
Blank 1.	102⅖	101½	101⅖	101⅗			
132	100	101½	101	100⅗			
Blank 2.	99⅖	101½	100¾	101			
" 3.	100¼	101⅞	100¾	100¾			

The matured cows were tested with a dose of two-thirds of a minim (Koch's); the yearlings with one-third of a minim.

NOTES ON TUBERCULOSIS.

By E. P. Niles, D.V.M., Blacksburg, Va.

(Read before the Virginia State Veterinary Medical Association.)

Before introducing my subject for discussion, let us inquire into the true standing of the veterinarian and endeavor to obtain a proper definition for the term. Until a few years back

the veterinarian was almost unknown in the United States, and consequently had no standing politically or legally or socially. Why the veterinarian has not enjoyed the same standing in every respect that his close relative, the physician, has, is simply because the proper definition has not been applied to the term veterinarian by the masses of people. The true veterinarian received, and does yet, to a certain extent, a "hard name" the moment he entered college, which requires years of trials and tribulations to live down.

The question naturally arises: What is a proper definition for the word veterinarian? Webster gives as a definition for the word, "One skilled in the diseases of cattle or domestic animals." I would say a veterinarian is one who is proficient in all subjects pertaining to veterinary science and has completed the prescribed course in a regularly organized veterinary college. Such men will command the same respect that is due any professional man; and I may add that such men are rapidly taking the place of the ancient "horse doctor," whose character had been in the main such as to give to the veterinarian the unjust reputation which has been so hard to live down, and which, to a great extent, still exists. The question may be asked, What bearing does the "horse doctor" have on the veterinarian? Simply this: By the majority of people we were, and are yet, to a great extent classed as horse doctors. It is almost an everyday occurrence for the veterinary practitioner to be addressed with: "Are you the horse doctor?" or "cow doctor" by some ignorant party. The time is now at hand when the veterinarian should command respect from all classes of people, for he is rapidly placing himself in a position to be classed among the public benefactors, in the way of suppressing and controlling contagious diseases among the lower animals, and indirectly among the human family. The hearty co-operation of the physician, however, is needed in this work, and, I am happy to say, our cousins are not slow to lend us their aid. I believe that the day is not far distant when the two professions will march hand in hand against the dreaded contagious diseases,

many of which affect man and beast alike. In some of these diseases it is first necessary to control them in the lower animals before they can be controlled in man. In this work the two schools of medicine alone cannot succeed. The co-operation of the State legislature is deeded. The organization of an official body of scientific workers must be effected. Money must be provided for its use, for without the proper funds nothing can be done. The present Board of Health is not even allowed money with which to buy its postage stamps. How can the board be expected to accomplish any good results under such circumstances?

The most dangerous contagious disease that the veterinary and medical professions have to deal with at the present time is *tuberculosis*. I say it is the most dangerous of all the contagious diseases because it affects both man and beast alike, and because it is so frequently transmitted from the lower animals to man.

This, until recently, has been one of the hardest diseases known to properly diagnose in all of its stages; especially is this true in relation to the lower animals. It is hardly necessary to state here, however, that we now have a reliable and positive aid to the diagnosis of the disease in all of its stages, *tuberculin*, the *modus operandi* of which does not require a description at this time, for the subject of my last essay is still fresh in your memory. For the introduction of this agent our thanks are due Dr. Koch, of Berlin. For the good results of its use in this country and the practical conclusions drawn from such, all or nearly all credit is due the veterinarians. As has frequently been stated, we now have a means at hand by which tuberculosis can be practically stamped out both among the human family and the lower animals. With this end in view, the veterinary and medical professions are working together; yet there is room for them to draw still closer together. They should mingle together in each other's societies, thereby enabling them more effectually to co-operate with each other. When this is done the importance of thorough and careful legislation for the suppression and control of contagious diseases will at

once thrust itself upon our legislators. The two professions combined will carry with them much more powerful influence than we can hope to carry alone, especially while our numbers are so small.

The question of legislation for the purpose of stamping out tuberculosis is an important one. Already some of the states in the Union have enacted laws for the purpose, while a few of them are quarantining against each other, and others are quarantining all herds known to have tuberculous animals among them, without any authority other than the general law controlling such contagious and infectious diseases. What the result of such action on the part of the State Board of Health and the State veterinarian remains to be seen. The effect of one State quarantining against another is to almost ruin the cattle industry in the quarantined district. Such a state of affairs exists between Vermont and Massachusetts. The latter has a law purporting to control tuberculosis, but its workings are anything but satisfactory. The law provides for the appointment of inspectors, but does not say that they shall be veterinarians, nor, in fact, medical men of any kind. The consequence is that incompetent men are appointed, more for their political value than anything else. Many of them, I am told, do not know a tubercle from a piece of normal tissue, neither do they know anything about the tuberculin test. They examine in a general way suspected herds, and pronounce them healthy or diseased according to their best common judgment. Qualified men are condemned for doing their duty, and ignorant men are put in their places. The compensation for animals destroyed amounts to little or nothing, consequently the dissatisfaction is great.

Legislation on the subject should not be gone into hastily as evidently has been the case in some of our sister states. Such legislation is bound to meet with opposition, and finally defeat. All sides of the question must be carefully weighed, and provision made for any point that is likely to arise in the workings of the law.

Our own State should not be the last to legislate on the subject of this loathsome disease. Our next legislature should, in some way, be made to see the importance of stamping out the disease, and induced to properly organize the State Board of Health and give them power and money to act in the matter. To procure the necessary laws will require the combined efforts of our society with the medical society of this State, as well as our own individual efforts. It is also necessary that the breeders of the State should join us in our efforts.

As I have stated in a previous article, all dairy and breeding herds should be put through the tuberculin test. It is also advfsable to make the tests as far as possible on all private herds, and the diseased cattle, wherever found, destroyed. Such animals, of course, must be paid for by the State. If the owners, however, could be made to look at the matter in the proper light, they would see that it would, in the end, be much more profitable to destroy all diseased animals at once, even though they received nothing for them. By keeping one diseased animal in the herd, the disease is constantly being communicated to the other animals, until finally the whole herd may become affected. Besides the danger of communicating the disease to himself and family would at once be avoided, by the destruction of the diseased animal or animals. It may be argued that the State cannot afford to pay for these diseased cattle. If the State has not now got the money at hand to carry out the work, a slight increase of taxes would readily supply the funds, and no one would or ought to object to having his tax only slightly increased if he knew that it was for the purpose of making his herds more valuable and almost entirely cutting off his chance to become a victim to tuberculosis. It would seem, however, that extra taxation is entirely unnecessary, for the amount required for the work would grow less after the first year or two.

The following figures show the approximate cost of exterminating the disease: In 1892 the estimated number of cattle in Virginia was 406,137. Supposing the number has remained

stationary, and estimating their value at $15 per head, the total value is $6,104,055. If 2% of these cattle are tuberculous, we then have 8,138 tuberculous cattle in Virginia. These cattle in health represent $122,070. Each one of these diseased cattle is capable of communicating the disease to one or more healthy individuals; in fact, one animal may affect a whole herd. But suppose the infection is in the ratio of one to two of every diseased animal each year. We will suppose then that in the year 1894 we have in Virginia 8,138 animals; at the above ratio of infection we will have in 1895, 10,350 tuberculous animals; in 1896 we will have 14,466. It will be seen that the number of tuberculous animals is rapidly on the increase, even with this small ratio of infection. If the true ratio of infection could be gotten at, however, I am of the opinion that it would be much greater. What other disease can produce such appalling figures? The infection does not stop with animals of the same species, but may extend to nearly all warm-blooded animals, and especially to the human family. I have stated in a previous article that fifty per cent. of the cases of tuberculosis in the human family came from the bovine species. If one person for every ten tuberculous cattle becomes infected from that source each year, we will have 813 more cases of tuberculosis in the human family in 1895 than in the year previous, and 1,085 in 1896, and so on year after year, to say nothing of the spread of the disease by those so infected.

Let us see what would be saved to the State and the private stock owners each year by stamping out the disease.

Let us suppose that one-half of the tuberculous animals are destroyed at once. We would have left but 4,969 diseased animals to spread the disease. The number infected by these, according to the above ratio, would be 1,356, making a total number of 5,425 affected animals in 1895, as compared with 10,850. In 1895 we will slaughter the remaining half of the original number, thus reducing the number of diseased animals to 1,356. In 1896 the infection will thereby be reduced to 452 animals, so that in the third year of our work we will have but

1,808 animals to slaughter, and at the same time we have gotten rid of the principal source of infection in this short time, thus increasing the value of our herds almost if not quite two-fold, and greatly lessening the danger to human life. In the first year we have saved the State, by preventing further infection, $20,340. In the second year the amount saved will reach $81,375. In the third year the amount saved will reach the surprisingly large sum of $199,870. It will also be seen that the number of cases of tuberculosis in the human family will be greatly diminished.

Now, suppose the State pays $10 per head for each animal slaughtered. The sum required would be $99,460, averaging about $33,000 per year for the first three years, after which $10,000 per year would carry on the work of the State Board of Health very nicely.

It has been shown above that the actual amount saved over and above the amount expended for the destruction of these animals is $203,125, to say nothing of the human lives that are annually saved.

This is a question that concerns all classes of people alike, and the State can no longer afford to defer action on the matter. The disease is assuming alarming proportions, and unless something is soon done tuberculosis or consumption will be almost as common as common colds.

I have endeavored to show that the veterinarian is now in a position to demand a hearing on these subjects that so constantly menace the public health, and that prompt action on the part of our next legislature will do much to advance the public welfare and the cattle industry of our State.

THE UNEXPECTED RECOVERY OF A CASE OF SUNSTROKE.

By LAWRENCE CAMPBELL, D.V.S., Chicago, Ill.

(A paper read before the Illinois State Veterinary Medical Association.)

MR. PRESIDENT AND GENTLEMEN:—The subject upon which I have written is entitled: The unexpected recovery of a case of sunstroke, which occurred in my practice two years ago last July. In bringing this case to your notice, I shall not

attempt to describe the disease in full, as the etiology and symptoms are well known to you all, but it is the unusual treatment which I wish particularly to set before you, the result of which surprised me greatly, in fact I have not recovered from it yet; the dose of the agent used was so very much larger than any text-book sets down as being safe to administer, and so much larger than any practitioner has ever before given, so far as I have been able to ascertain, that I have decided to place the matter before this association for discussion. To explain the results of this unexpected recovery from a toxic dose, I must first give the history of the symptoms of the case, as I found them from hour to hour after reaching the patient.

I was called by telephone about 6 o'clock P. M. one evening in July, 1892. The call stated that one of a heavy team of draught horses, belonging to a customer of mine, had fallen on the street about an hour previously; as numbers of horses were falling with sunstroke daily, sunstroke was uppermost in my mind. I ascertained the symptoms over the "phone," and diagnosing the case as one of sunstroke, I ordered the immediate application of quantities of water externally, and ice to the brain. As the case was fully five miles away, I was unable to see the patient for nearly an hour, so was unable to find out the extent of the height of temperature at that time; however, upon reaching the patient at 7 o'clock P. M., I found the temperature 105½°, the pulse rather uneven, and frequently (I do not recollect the number of beats per minute) the breathing was quick and hurried, the horse seemed to be in a semi-unconscious condition and laid quietly upon his side. Upon examination I found him to be a gelding, six years old, and weight about 1,450 pounds. I ascertained from the driver that he had had a slight attack the year previous. I immediately mixed him a dose of all the stimulants I had, and sent the driver to the nearest drug store, which was a mile away, for a fresh supply. At 8 o'clock P. M. I found the temperature 103°, and discontinued the external application of water; at 10 o'clock P. M. he was struggling to rise but was not quite strong enough. At this time I admin-

istered two ounces of spirits of nitrous ether. At 12 o'clock P. M. he was rolling upon his chest and eating little hay, and at 2 o'clock A. M. he came a number of times so near rising that I thought it safe to leave him in care of the driver and a friend of his, as he was gaining strength so rapidly I had no doubt of his being upon his feet before sunrise, and leaving some stimulant with the men, to be given during the night, I went home. At 7 o'clock A. M. I was called again and was told that the patient was worse, and to come up right away. Upon reaching there I found that my expectations had not been verified and that he had not been able to rise, although he had nearly done so with assistance many times. I found upon examination that the temperature was 102½°, the pulse even, but weaker than before. He was able to roll upon his chest, but would fall again unless held up. I administered more stimulants, and as there was a large sewer being built near us I went over and procured eight men to help us try to lift him up; there were then eleven of us there, and we used our combined efforts on him, but were unable to stand him up although he helped himself as much as possible. As the sun was getting hot we borrowed some boards from the sewer builders and built a shed over him, and poured buckets of water over him occasionally. At 10 o'clock, A. M. he was no longer able to roll upon his chest, and the pulse was weaker and faster than at 8 o'clock. I gave more stimulants, but they had no effect. At 1 o'clock I gave three ounces of aromatic spirits of ammonia and one drachm of the fluid extract of nux vomica in solution. This dose had no effect, and as at 2 o'clock P. M. he could not throw his head more than a foot from the ground, I decided that I would destroy him, as I felt confident he would never recover. As I had no fire-arm with me I decided I would poison him, and examined my medicine case to see what would, in my opinion, do the work. I found that I had two agents that would be powerful enough, I thought. One was a full ounce of the tincture of aconite root, and the other the remaining seven drachms in an ounce bottle of fluid extract of nux vomica. (You will remember that one drachm of nux had been given

one hour previously.) I decided upon the nux, for two reasons: First, because I thought that seven drachms of the fluid extract ought to contain a sufficient quantity of strychnine to kill him; and secondly, if it did not that it might so tone the nervous system as to give him sufficient strength to rise. But I expected this thought was far from being realized. I did not inform my assistants what I intended, as I did not want the owner to know that I had given him up and destroyed him; therefore I only told them that it was time for another dose, and after mixing the drug with about a pint of water, and with many sorrowful feelings I poured the whole seven drachms down his throat. I expected to get symptoms of poisoning in ten or fifteen minutes, but the symptoms were slow in appearing, and as time passed on I racked my brain, wondering why he didn't go into spasms and die. He had made no move in fifty minutes after giving the dose, until suddenly he made a spring, gained his front feet, sat for an instant on his haunches, and fell over on his side. His exertion did not seem to exhaust him, and we three stationed ourselves in position to assist him, if he should try again. We did not have long to wait, for suddenly he was up again, and by dint of lifting and pushing he stood upon his feet. I have seen many weak horses, but it has never been my experience, either before or since, to see one show such weakness as this one. All his limbs trembled beneath him, and for fully an hour we had to hold him and prop him up before he was able to stand alone. At this time it was 4 o'clock, and as there was a small wood about fifty yards distant we decided that if we could get him into it that we would leave him there for the night. We started him along, and at the end of about thirty minutes we had him in the woods, where we left him. The following morning it was raining hard and was quite cold. I found the patient standing in the identical spot where we had left him. He had not moved a step. I tried to move him but he seemed to be rooted down. As I thought the cold rain would do him much more harm than good, and as I did not think I could move him to shelter, I went to some of the

neighboring houses and tried to get a rubber blanket to put over him, but although they had them they would neither lend or sell them. I then determined that I would try to take him home (about two and one-half miles), and if he fell I would get a gun and shoot him. I picked up an old piece of rope, attached it to his neck and tried to lead him, but I could not get him to budge. I then removed the rope and whipped him with it gently. At this he tottered off a step or two. I then replaced the rope on the neck, and he started after. His action was that of a horse about one hundred years of age. I found for the first mile that unless I allowed him to rest at the end of about every block he was completely played out. But on the second mile he limbered up and gained strength, and by the time we had reached his barn he was walking almost as well as ever. Upon getting him under shelter, I made a careful examination and found much to my surprise, and disappointment, that he was totally blind in both eyes; pupils dilated. I could not make up my mind what to do for this condition, so did nothing, but prescribed drachm doses of nux with two ounces of nitrous ether every four hours, for his general condition. The next day I found him so much stronger that I decided to stop this treatment and try to do something for the eyes. I had been informed, previous to this visit, by two M.D's, that in the human subject, if blindness followed sunstroke, and continued for one hour, that the patient would be permanently blind. Regardless of this, however, I decided that it would do no harm to try to do something, and I decided upon potassium iodide 3 ss. in solution, three times a day. His condition at the end of a few days did not improve. About this time I told a friend, Dr. E. L. Quitman, about the case; as he had a call in the vicinity, we visited the patient together. Dr. Quitman suggested that I make the dose stronger by the addition of one drachm of iodine crystals. I wrote the following prescription:

℞ Iodidi Cryst. . . . . 3 i.
Pot. Iod. . . . . 3 ss.

Give in two ounces of water three times a day.

At the end of ten days the pupils were slightly smaller, and he seemed to be able to see daylight. Two weeks later he was entirely cured and could see as well as he ever did. He is at the present time making one of a heavy team, and has been since he recovered his sight. He is still owned by the same firm, and is considered one of the best horses out of a total of twenty-six. His eyes are first-class, and he has never experienced another sunstroke, but has worn a damp sponge in hot weather. What I wish particularly to call attention to in this report is the great dose of the fluid extract of nux vomica that this horse took without one symptom of poisoning. It is a well-known fact that nearly all drugs can be given in larger quantities in many subjects than are usually set down in text-books or taught in colleges; but as the dose of nux is from ʒ ss to i. I should like to create a discussion as to how this animal was able ro get away with seven drachms, and not only live but have the drug act upon him in such a way, and to such purpose, as to enable him to support himself in one hour from the time of giving the medicine, and after being down twenty-one hours and being unable to raise his head more than twelve inches from the ground at that time. Perhaps nux in very large doses would be of great benefit in similar cases where great prostration is present. To conclude, I can only say that it was "dumb luck" on my part, and that if I ever had another such case I should probably hesitate a long time before I should dare to repeat the treatment.

(A few remarks as to the action of nux vomica and its contained alkaloids will not be out of place.)

Strychnine is found in the crude drug (which is equal in strength to the fluid extract) in the proportion of one per cent. Nux vomica also contains two other alkaloids, namely, brucine, which is one-twelfth as strong as strychnine, and igasurine, which is one-sixth as strong as strychnine. The dose set down by Dr. Withers, in his lectures at the Chicago Veterinary College, of strychnine by the mouth, is gr. i. to ii. By Finlay Dun, gr. i. to iij. One ounce of fluid extract of nux vomica contains

4 80-100 grains of strychnine. Finlay Dun states that in a case of paralysis in a four-year old horse, following acute staggers, he administered four grains of strychnine twice daily in bolus, and without toxic effects. Later he increased the dose to five grains twice daily. This dose had no poisonous action. The animal improved under this treatment, but not fast enough to suit the owner, who had the patient destroyed. The smallest dose known to have killed a human being is one-half a grain. The smallest dose known to have destroyed a horse, that I can find recorded, was five grains, given by the mouth, the animal dying in eighteen hours. Strychnine tones up the muscles by stimulating the motor and vaso-motor tract of the spinal cord, the centres of which are located in the medulla. It also tones the heart; this is done by stimulating the motor ganglia. It stimulates the respiratory movements by exciting the spinal and medullary respiratory centres. It is excreted mostly unchanged by the kidneys, and in full doses it dilates the pupils.

REPORTS OF CASES.

CYSTIC CALCULUS.

By F. H. FARMER, D.V.S., Washington, N. Dak.

On July 5th last I was called to see an 18-month's old percheron colt. Upon examination I found the animal in considerable pain, breathing rapidly, pulse increased in frequency, and weak. He would strain frequently, with a desire to urinate manifested by stretching himself out, kicking at his belly, groan and lie down in pain. There was incontinence of urine, which flowed over the thigh and legs, excoriating the skin. The owner informed me that the colt had been ailing for about four months, and had gradually grown worse from the first time he had noticed anything wrong. After emptying the rectum with an enema, I proceeded to examine the bladder. The oiled hand passed into the rectum could easily detect a large calculus in the bladder, so large that it obstructed the free passage of

fæces. I concluded an operation was impossible, owing to the extraordinary large stone. Two days later the colt died.

Post-mortem Examination.—On opening the abdomen, all the urinary organs in a healthy condition except the bladder, the external surface of which presented a dark-red appearance. On opening the bladder I discovered a large pear-shaped calculus, which weighed twenty-seven ounces; it measured in circumference, antero-posteror, 14 inches; lateral, 11 inches. The bladder also contained a small quantity of urine, and showed signs of chronic cystitis throughout the entire organ.

ROARING—TEMPORARY RELIEF.

By W. C. Siegmund, D.V.S., House Surgeon.

In the fall of the year 1893 a bay mare, 7 years of age, was brought to the American Veterinary Hospital, suffering from chronic roaring. The owner had bought the horse recently, and asked for treatment.

Upon observation, the animal was found to roar upon the slightest exertion, and could not be driven out of a walk. Upon manipulation of the throat, there were found no swellings, but the larynx was abnormally firm, resisting all pressure. The pulse and temperature were normal when the animal was at rest. The diagnosis made was that of ossification of the laryngeal cartilages. As to the treatment, the owner was advised that no operation or medicine would cure the trouble as far as the organ itself was concerned, but that the animal could be made useful by the permanent insertion of tracheotomy tube.

The owner consented to an explorative examination of the larynx, and the insertion of the tube. The animal was accordingly casted, and secured in such a manner.

An incision was made through skin, the adjoining tissues dissected away until the cricothyroidian membrane came to view. The neighboring blood-vessels were ligated and parts rendered antiseptic. An incision was then made through this latter membrane, exposing the interior of the larynx; the mucous membrane was found to be thickened, the vocal cords flabby, and the car-

tilages, the seat of an osseous deposit, with anchylosis of their articulation. The flabby vocal cords were removed, the tracheotomy tube inserted, and the animal allowed to get up. The animal breathed much better, and after a few days the tube was removed and inserted into the trachea at the upper third of the neck; the first wound was allowed to heal.

The owner took the animal home, and was advised to remove the tube at least once a day and clean it and the wound,—oftener if necessary. He reported at times that the mare was doing well, doing her daily work, and stating that it was necessary to enlarge the opening in the trachea on several occasions. He brought the mare to the hospital; she was seen to be in fair condition in the month of October, 1894. Then, to our great surprise, he brought us the trachea and larynx of the horse two or three weeks later, to be shown to the class and preserved as a specimen. He reported that as he had no use for the mare this winter, he had given her to some parties to keep. These parties had not followed the directions given as to the care of the tube, and had let the tube clog with mucus and filth. Thus the animal was forced to breathe through the larynx, which had grown more firm, besides atrophying and this breathing becoming laborious, caused the mare to choke, throwing her into convulsions, at which the parties became very much alarmed, and had her destroyed.

The specimen exhibits all the laryngeal cartilages more or less the seat of an osseous deposit, thickened mucous membrane and submucous tissues, atrophy of all intrinsic muscles, and anchylosis of all the articu.ations. The trachea exhibits at the point of opening a chronic inflammatory condition, with thickening of the mucous membrane, and infiltration with fibrous organization of the submucous tissue. The post face of trachea likewise exhibits a thickened condition of the tissues, at the point corresponding to the lower end of the tube. The thickening, well defined, had caused considerable pressure on the cartilages when the tube was inserted, and thus cause a distortion in the shape of the organ.

A CASE OF RUPTURE OF THE SESAMOID LIGAMENTS.

By JOHN MINCHIN, V.S., Goshen, N. Y.

On the morning of March 22d, I was called to see a case of unusual interest, as it is the first I have met in my practice of several years. On that morning Daniel Conklin, living on the Young's farm (3) three miles from Goshan, hitched up his team to take his milk to the condensory, four and a half miles. When he arrived there he found one of his horses quite lame in the off hind leg. Examined foot but could find nothing—horse getting lamer all the time. When about a mile from home he stopped, not yet knowing what had happened—he discovered for the first time blood on the ground, the horse was standing on his hind *pastern bones*, the feet entirely separated from the joint as perfectly as *per. knife*, only held by about (2) two inches of the skin —although he had yet a mile to get home, the horse walked there on those nude extremities with the hoofs flopping in every direction.

Mr. Conklin owns the horse two years and he never showed any signs of hind trouble before. The bleeding was not profuse, which makes the case somewhat more confusing. There were many visitors to see the animal previous and subsequent to his death which I ordered.

A FEW CASES RECENTLY TREATED.

By. G. L. Hagenburger, D. V. S., Brooklyn, N. Y.

I.—Bay gelding, eight years. Fibroma in the occipitol atloid region, size of a boy's head, hard and indurated, animal being unable to turn its head freely, Owner would not lay up the animal for an operation, and being a rather poor place to obtain proper drainage, used a galvanic battery (eighteen cells) with a Sol. of Iod. Pot. to the sponge electrodes applyed to the enlargement directly and its surroundings for five days and afterwards substituted Tr. Iodine on my electrodes. Subjected the animal to three more seances, after which the tumor disappeared entirely by the chatophoretic action produced by the currents

along with the absorbents used in destroying the cells of the growth by a chemical poultice.

II.—Gray mare, six years. Found pulse sixty per minute, weak, respiration, six; conjunctive deeply injected, extremities cold, head hot, down and unable to move, left fore leg cramped, unable to straighten it out. Animal was in that condition for one hour before my arrival. I inquired into the history, no information from attendant who was present at that time except that he was left in charge after the owner left.

Diagnosis.—Œdema of both lungs and cerebral congestion. Cause, at that time unknown.

After hunting up the owner for a history, was told that the animal had suffered from slight attack of colic in the morning, and the attending veterinarian left a prescription to be given in case of a return of pain. Contents of prescription consisted of

℞ Tr. Opii., ℥ iii,
Ether Sulp., ℥ iii.

Just one dose; no other direction.

Was told when the draught was given that the animal was coughing severely, afterwards, and immediately went down, breathing heavily until found by me in aforesaid condition.

Cause.—As above seen, the draught was not diluted, and being a large dose, gained access to the trachæa and large bronchial tubes and lungs proper, a large area of absorption for the mixture given, causing the above stated symptoms.

Treatment.—Artifical respiration by means of wire brush, attached to negative and positive pole, farradic battery, two cells) to the costal region, saturated with a saline solution, which gave the following results:

In five minutes, pulse slightly fuller; respiration, 8; cramped and fixed foreleg, straightening gradually; perspiration over some parts of neck; œdema of eyelids disappearing.

The current was applied along spinal column, negative pole, positive pole, over the region of pneumo gastric nerve. Warm mustard water applied to extremity with friction, and saturated

cloths applied to them. One injection of 10 oz. saline solution intravenous.

Ten minutes, pulse 70, and fuller; respiration same; eyelids opening; slight riggors; trying to pass urine; chateber was used and about one quart taken away (high color and aromatic); hardening of sub-maxillary gland made its appearance, which increased to the size of a chicken egg. Animal was turned.

After twenty minutes another saline injection and general faradization of chest and costal region. Pulse, 55; respiration, 9, and steterous; very much forced inspiration; expiration short and quick; froths from nostrils, mixed with blood; paroxisms of coughing; tongue hanging out, and inability to swallow, being cold and apparently paralyzed.

Thirty minutes, same; the current stopped for five minutes, then applied again as before. Two hours after rigidity ceased; pulse fuller; respiration increased to 10, and easier, extremity beginning to get warmer; costal muscles assisted greatly in respiration; afterwards the animal made several attempts to raise its head. I remained during the night subjecting the patient to several more treatments of farradic current after which he recovered towards morning from immediate danger. I left him then with a cardiac stimulant, but a severe case of bronchial inflamation was the result, from which the animal recovered under the ordinary treatment.

Please notice the enlargement of the subra mapillary glands which disappeared the following day. Will some experienced practioner offer a cause as to that, as I am in the dark on that point? I may say that since I am using farradic treatment in all cases of pulmonary congestion and apparently with marked results, as well as in other complications, such as azoturia and severe colics, where a break evacuation of the intestines is promptly desired. In azoturia farradization over the hard, rigid muscles, as well on electrode, placed in the rectum, (which I first fill with a saline solution) after which I often get the desired result in from twenty-five minutes to one hour. Those gentlemen who had similar experiences please report them if time will al-

low. Those who have not tried please don't ridicule but try it and criticise afterwards, in that way an all around benefit will be the result as no evil consequences can follow.

CORRESPONDENCE.

PLEURO-PNEUMONIA IN THE UNITED STATES.

Editor AMERICAN VETERINARY REVIEW.

DEAR SIR:—In the editorial of your February issue, you draw attention to the fact that several times within the past year our cattle exported to European ports have been condemned as being affected with contagious pleuro-pneumonia.

The authorities of the Bureau of Animal Industry at Washington deny the existence of said disease among the cattle of any of our States during the past two years.

In view of these conflicting statements, the veterinary profession of America is interested and justified in asking "When is the truth?"

I will, in the first place, briefly refer to facts within my own knowledge, and confine these statements to Long Island. It will be admitted by all that a large percentage of the cattle on this island were in 1879 infected with contagious pleuro-pneumonia, and were so for at least twelve years prior to that time, having the identical specific lesions, symptoms and history special to and typical of this disease. I had no difficulty then in recognizing and diagnosing my old friend, with whom I had had many a tilt in Scotland, before the stamping out process was ever thought of, and if we did not succeed in saving the lives of many, we certainly had better opportunities then of noting the various phases and progress of its history and peculiarities than the modern veterinary butcher ever had.

When the stamping out process began on this island in 1879, I, with many others, was very skeptical as to its ultimate success as a means of eradicating this disease, for the following reasons:

1. It had been allowed full sway among all classes of cattle

for seventeen years. 2. The animals were housed in wooden stables with contaminated surroundings, which it would prove impossible to properly disinfect. 3. The insidious character of the disease and the difficulty of preventing the introduction of infected animals.

But to-day I can state for a fact that there has been no case found on this island during the past two years. I had been anticipating such a case and have put myself to considerable trouble in inspecting suspected herds and suspicious carcasses by post-mortem examinations, but not one outbreak have I detected up to date. If the "stamping out process by the pole-axe" has been so eminently successful in this district, the chief centre of contamination, I am justified in thinking that it has been so in other parts of the country, and so I do believe the United States of America, to be for the past two years, and up to date, free of this bovine pest.

It the face of these statements, it matters not, in my opinion, what are the macroscopical or microscopical appearances of the lesions found in the lungs of our American cattle by European experts. The most important and essential link in the history of contagious pleuro-pneumonia is missing, and until this link is found to exist in this country, all other pathological appearances are not complete or conclusive evidence that said cattle had been affected with this disease.

Several animals are reported as being condemned from various cargos at different times during the past two years, and one is justified in assuming that those cattle were drawn from various States, hence there must be several infected centres. If that were so, not even Yankee ingenuity could suppress the knowledge of their existence and location for such a length of time.

There are many like me in the veterinary profession, and others in this country, who did not believe that the stamping out process would be a success, and would be only too ready, at this date, to back up our prophecy with facts, did they exist, and would now say, "I told you so."

Now look at this controversy from a purely professional

point of view. I understand that our English and Belgian expert friends found lung lesions of a pronounced character as regards extent of invaded tissue. Assume that these animals were slaughtered twenty days after leaving their original starting point, they must have been then affected, if this is contagious pleuro-pneumonia, and at the time of shipment must have been observably sick animals, with a temperature of 105° F., and that very careless inspection would detect them as unsound, and it would be expected that many would be sick and a few dead at the end of the voyage.

The incubation stage of this disease does not, in my experience, last over from one to three days, when then there are found lung lesions readily detectable on physical examination, coupled with the characteristic appearance exhibited by the live animal.

No typical case of contagious pleuro-pneumonia was ever limited to one animal, providing that animal was allowed to freely cohabit with others during the various progressive stages of the disease.

In the absence of this "missing link," the pathological condition found in the lungs of these animals cannot be those of contagious pleuro-pneumonia contracted in this country.

What are they? If we take a little history into our confidence, I think you will agree with me that they are due to an acute attack of bovine tariff pneumonia of a sporadic character.

L. McLEAN, M.R.C.V.S.

CORRECTION.

Dr. A. Liautard. NEW YORK, March 8, 1895.

DEAR SIR:—I have just received a copy of the March AMERICAN VETERINARY REVIEW, and in it I notice a review of Hoare's book.

I sent you the copy, and so this house should be recognized instead of Balliere's, or at least along with Balliere's. I presume the fault lies with the proofreading, for I do not believe you would be so discourteous. Very truly yours,

For MRS. JENKINS. J. IRVING MURRAY, Jr.

It is with pleasure that we give Mr. Murray full acknowledgment of our oversight. Hoare's book is published in America by his house.

MALARIAL POISONING, OR SIOW FEVER.

Editor AMERICAN VETERINARY REVIEW :

Since my article on Malarial Poisoning (slow fever), I received a letter from Dr. G. A. Johnson, Sioux City, Iowa, in reference to the bottom disease of the Missouri bottom, and that it is of a miasmatic nature, and so serious that most veterinarians and horse owners have come to the conclusion that it very seldom pays to treat a case. Dr. Johnson has come to the conclusion that bottom disease is a cirrhosis of the liver due to miasmatic poisoning, and that the disease as seen in horses quite closely resembles malarial cirrhosis of the liver in man. With this letter from Dr. Johnson I received a copy of a report of this disease, by Dr. Fairchild, which I think ought to be sent to the AMERICAN VETERINARY REVIEW for publication. It is the first article of its kind I ever read, and is very interesting. Dr. Fairchild is Professor of Therapeutics and Patholoy in the State Agricuitural College of Iowa, and I should like to see the publication of the report in the REVIEW for the benefit of the profession. Possibly the editor knows of Dr. Fairchild, and could get his permission to publish it.

Yours truly,

H. S. ADAMS, V.S.

Centreville, Queen Ann Co.,
Maryland.

COLLEGE COMMENCEMENTS.

AMERICAN VETERINARY COLLEGE.

The closing exercises of the twentieth session of this institution were held on March 25, 1895, at Chickering Hall, with the usual display of flowers, music and so forth that are presented at such meetings.

The conferring of diplomas was carried out by Dr. F. D. Weisse, President of the Board of Trustees. The illness of

Professor Liautard preventing him from calling the names of the successful candidates, the same was done by Professor Coates. as follows:

Augustus Hull Blake, Richmond Hill, N. Y.; Homer Harris Butler, New York, N. Y.; Harry Baker Cox, Merchantville, N. J.; Joseph Francis Devine, New York, N. Y.; Martin Joseph Dair, New York, N. Y.; George B. Gillmor, Pittsburg, Pa.; Robert Johnston Halliday, Jersey City, N. J.; Frank Reed Hanson, New York, N. Y.; Edwin Allen Hogan, Bayonne, N. J.; Moses Isaae, New Haven, Conn.; Nicholas John Kaiser, Newark, N. J.; James Michael Laffan, Irvington, N. Y.; William Henry Lawes, Jr., Shrewsbury, N. J.; Aquila Mitchell, Skaneateles, N. Y.; John Joseph Moynahan. Holyoke, Mass.; Francis Theobald O'Sullivan, New York, N. Y.; Bryer Hamilton Pendry, Brooklyn, N. Y.; Clarence R. Shults, Ogdensburg, N. Y.; Aaron Silkman, Goldensbridge, N. Y.; Wright J. Smith, Kingston, N. Y.; John Newkirk Wrong, Sedalia, Mo.

The prizes were then presented in the following order:

The Trustees' Prize for the best general examination, to Aquila Mitchell, D.V.S., of Skaneateles, N. Y.; the Alumni Prize for the second best general examination, to Frank Reed Hanson, D.V.S., of New York City; the Faculty Prize for the best practical examination, to Frank Reed Hanson, D.V.S., already mentioned, and who received also the Senior Anatomical Prize, The Junior Anatomy Prize was granted to Mr. Laddey for the best examination in that department. The Prize of the Class Association was given to Martin Joseph Dair, D.V.S., of New York City.

Of the beneficiaries which are offered by the Faculty, and consist in a full free ticket for attendance to lectures of the third year for the second year students, and of a half free ticket for the first year student who obtains the highest mark above 75 in all the departments, Mr. S. S. Buckley of second year, and Mr. Laddey of the first year, were the successful candidates.

The valedictory address was delivered by Dr. Bryer Hamilton Pendry, of the graduating class.

Dr. W. J. O'Sullivan, LL.D., K.R.C.V.S., addressed the class afterwards.

The exercises closed with the benediction at the hands of Rev. Dr. David G. Wylie.

After a very pleasant entertainment the newly made veteri-

narians joined their comrades of the Alumni Association, and passed a charming evening and part of the night together, after partaking of a well-served supper, where many had gathered to talk of past college life, of future expectations in professional life, and of many friendly recollections, with great promises of soon meeting again, and of everlasting friendship.

CHICAGO VETERINARY COLLEGE COMMENCEMENT.

On Thursday, March 21, 1895, a banquet was given at the Sherman House by the faculty of the Chicago Veterinary College to the graduating class, which proved a most enjoyable affair. Prof. Jos. Hughes acted as presiding officer on the occasion, and speeches were made showing the good will existing between class and faculty. To the toast "the class of '95," Dr. George A. Lyttle responded. "The Young Veterinarin in Practice" was done ample justice to by Dr. A. E. Flowers. The College Association, was responded to by Drs, J. M. Lambert and A. Mc. Bride. The Faculty, by Prof. A. H. Baker and "Success in Life" by Major W. A. McCluer. Speeches were also made by Profs. Geo. S. Baker, J. F. Ryan, E. L. Guitman and C. D. Sayre. Letters were received from Profs. S. J. I. Harger, W. L. Ruill, E. A. A. Grange, D. A. Salmon, A. Liautard, T. D. Hinebauch, Mayor Hopkins, Health Commissioner Reynolds and John G. Shortall President of the Illinois Humane Society, regretting their inability to attend.

The twelfth annual commencement exercises of Chicago Veterinary College, were held Friday, March 22nd, and forty-two graduates received the diploma of the institution. The exercises were presided over by Prof. Joseph Hughes, who presented the Secretary's report for the past year. He stated that of the forty-two students who had just graduated, eighteen had graduated with honors of which the following is the list. G. F. McGuire, deserves special mention as having the highest general average. Dr. W. A. Savage, received the prizes in anatomy and chemistry, and G. A. Lyttle the prize in theory and prac-

tice. Having concluded his report the degree. "Doctor of Comparative Medicine" (M. D. C.) was conferred by the chairman on the members of the graduating class. Following the conferring of the degree came the distribution of diplomas, and afterward the valedictory by Dr. C. I. Flemming, (copy of which will be sent). On the conclusion of the valedictory address Dr. J. J. McGrath, the class prophet read an effusion, which caused considerable merriment among his fellow graduates. The doctorate address on behalf of the faculty by Dr. A. H. Baker, concluded the proceeding.

The following is a list of the graduates and their locations: —H. G. Bailey, Hinsdale, Ill.; W. C. Baldwin, Roscoe, Ill.; F. C. Binnewies, Walworth, Wis.; R. S. Blackburn, Quincy, Ill.; W. E. Bradley, Lee, Mass.; W. H. Broderick, Chicago, Ill.; W. H. Clarke, Monticello, Wis.; F. A. Crandall Jr., Buffalo, N. Y.; A. E. Flowers, Lyndonville, N. Y.; J. W. Golden Jr., Sleepy Eue, Minn.; F. E. Greene, Lake Geneva, Wis.; A. H. Hartwig, Watertown, Wis.; S. K. Hazlet, Elgin, Ia.; I. W. Horton, Providence, R. I.; G. D. Judson, Polo, Ill.; R. A. Kammerer, St. Louis, Mo.; C. P. Kime, Montpelier, O.; P. O. Koto, Forest City, Ia.; F. S. Lambert, Du Page, Ill.; J. M. Lambert, St. Peter, Minn.; H. Leutholt, Taylor, Pa.; G. A. Lyttle, Palatine, Ill.; A. McBride, Chicago, Ill.; J. J. McGrath, Chicago, Ill.; G. F. McGuire, Waterbury, Conn.; E. N. Nettleton, Chicago, Ill.; A. J. Payne, Wabash, Ind.; J. T. Pfeifer, Franklin, Wis.; E. G. Piper, Palmyra, Wis.; J. R. Sanders, New Sharon, Ia.; H. O. Sandford, Tyndall, S. D.; W. A Savage, Lockport, Ill.; S. Sieker, Herman, Wis.; V. P. Smith, Samestown, O.; H. W. Stern. Beaumont, Tex.; H. E. Talbot, Desmoines, Ia.; C. F. Van Blankensteyn, Brooklyn, N. Y.; B. H. Wood, Strearor, Ill.

NEW YORK COLLEGE OF VETERINARY SURGEONS.

On March 18, '95 the commencement exercises of the institution were held in the music hall of Madison Square Garden—Prof. Van of Cornell University addressed the class.

The following gentlemen presented themselves on the platform and received their diplomas:—William Anderson, New York; Ernest Buckley, California; Frederick Bovers, New York; George D. Burton, New York; Leopold Danielson, Norway; Clarence O. Durfee, New York; Edward. B. Doyle, New York; Albert D. Edwards; New York; William J. Fredericks, New Jersey; August D. Krahmer, New York; John C. Kingsland, Pennsylvania; George A. Knapp, New York, George P. Kern, New York; M. O'Malley Knott, New York; Thomas H. Lynch, Connecticut: Russel Lawton, Canada; Nelson Moffat, New Jersey, Edward A. Manual, Wisconsin; Patrick J. Mahoney, Massachusetts; David C. McCowan, New York; Patrick McInerney, New York; Alfred T. Norman, New York, William H. C· Neff, Pennsylvania; Albert C. Roberts, New York; Rudolp J. Schreiber, New York; John E. Simpson, New York; Frederick L. Stevens, Maine; Joseph Thackeberry, New York; William J. Taylor, New York; Willy E. R. Weyman, New York.

The following prizes were awarded: Faculty Prize—for best general examination, a gold medal—to Willy E. B. Weyman. For best general junior examination, a silver medal—to George H. Harrison. Medal for the best examination on Materia Medica—to Edward A. Manual. Practical examination, $25 before a committee composed of R. S. Huidekoper, M. D., Vet., Thomas Giffen, M. R. C. V. S., and James Turner, D. V. S.—to M. O'M. Knott. Messrs. Kahmer, Manual, Mahoney and Norman were also highly commended.

KANSAS CITY VETERINARY COLLEGE.

This was the fourth annual commencement of this institution —it was held on March 21, '95. The following gentlemen received their degree:—Wm. L. Elliot, Spring Hill, Kansas; Albert B. Wilmoth; Turney, Missouri; Scott W. Peck, Las Animas, Colorado; George M. Neednam, Rockford, Illinois; John E. Topping, Paol, Kansas; Harry V. Goode, Lexington, Missouri; Clarence Atwood, Pecatonica, Illinois; John W.

Stalker, Adrian, Kansas; William T. King, Clinton, Missouri; Henry R. Thompson, Aurora,.Kansas; William A. Mark, Elgin, Illinois; Silas L. Brooking, M. D., Eureka, Kansas; James H. Cock, Clinton, Missouri; John O. Young, Rice, Kansas; Benjamin, F. Kaup, Nevada, Missouri.

ONTARIO VETERINARY COLLEGE.

The great event of this institution took place on March 29th, when 150 gentlemen graduated Dr. Duncan read the following list of graduates, honor and prize men:

GRADUATES.—Leslie J. Allen, Blue Mound, Kan.; James H. Armstrong, London, Ont.; C. E. Arnold, Branl, O.; Jas. E. Alyed, Consecon, Ont.; Oscar J. Amey, Ernestown Station, Ont.; Forrest P. Barrett, Peterboro', N. H.; James A. Bean, Wellington, Ont.; Llewellyn W. R. Best, Sandford, Ont.; S. P. Bishop, Greencastle, Pa.; Albert M. Blackwell, Omaha, Neb.; J. F. Blinzley, Norwalk, O.; David R. Bone, Paisley, Ont.; Edward T. Bowers, Cedar Rapids, Neb.; Henry Boyd, London, Ont.; O. E. Brandreth, Strathroy, Ont.; Charles E. Broad, Nomence, Ill.; Thomas Broom, Blenheim, Ont.; George J. Brossard, Fall River, Wis.; O. Clifton Burnett, Youngstown, O.; Edward D. Burns, Farmington, N. Y.; James H. Burt, Loswithiel, Cornwall, England; Herman Busman, Cooperville, Mich.; Edward F. Bettinger, Chittenango, N. Y,; Ernest C. Burdick, Livonia, N. Y.; Harvey H. Carter, Brookfield, O.; John M. Coates, Kearney, Mo., Frederick W. Cook, Jamesville, N. Y.; Dillon Coristine, Watford, Ont.; Aaron Cornell, Elkton, Mich.; Frank B. Cocton, Grand Rapids, Mich.; H. S. Creighton, Americus, Kan.; Bradford D. Curtis, North Attleboro', Mass.; Dwight S. Church, Scranton, Pa.; Willard De Bolt, Union City, Ind.; Roy E. Davis, Toledo, O.; James Dent, Milton, Ont.; J. M. Dodge, Caro, Mich., Joseph A. Douglas, Blake, Ont.; William F. Duffield, Pittsfield, Ill.; W. J. Davis, Decatur, Ill.; Louis H. Eckert, Sebringville, Ont.; John W. Farr, Jarvis, Ont.; W. H. Farrow, Auburn, Ont.; George H. Fitch, Claremont, N. H.; George D. Fortune; Wingham, Ont.; William Fotheringham, Grenfell, N. W. T.; Arthur P. Freeman, Barrie, Ont.; James G. Galloway, Uxbridge, Ont.; Augustine J. Gibbons, Wingham, Ont.; John G. Gibson, Alameda, N. W. T.; S. Wells Gibson, Cleveland, O.; H. M. Gillian, Ackley, Iowa; Francis W. Gokey, Guelph, Ont.; Albert E. Goodwin, Hager City, Wis.; Robt. L. Graham, Schomberg, Ont.; James Grant, Teeswater, Ont.; Lawrence A. Grinnell, Grand Ledge, Mich.; Joseph A. Hackett, Hockley, Ont.; Henry H. Hackler, Pottstown, Pa.; Joseph Hamilton, Auburn, Ont.; William S. Hamiton, Chelsea, Mich.; Edward T. Handy, Onondaga, Mich.; William T. Haney, Forest, Ont.; Bernard Harmon, Decorah, Iowa.; George A. Hay, Campbellford, Ont.; Edwin M. Henry, Oswego, Kan.; Alfred S. Henhoeffer, Strasburg, Ont.; Robert J. Henry, Mono Mills, Ont.; Robert C. Hill, Twin, O.; W. Proctor Hill, Frederick, Md.; John B. Hollenbeck, Rock Valley, Iowa; Maurice A. Hollingsworth, La Salle, Ill.; David Hood, Alliston, Ont.; Roy White, Hooker, Lowell, Mich.; Benj. F. Hoover, Davis, Ill.; William R. Hynes, New York City; Hiram E. Hensel,

Albert W. James, Toronto, Ont.; John V. Jewell, Marcus, Iowa, U. S.; John W. Arcadia, Wis.; Charles E. Inskeep, Port Jefferson, Ohio; George Ireland, Inglewood, Ontario, Johnston, Bath, Ont.; J. M. Clinck, Toronto; William H. Lake, Miami, Man.. Alexander O. Lee, Toronto; John Letham, Stonehouse, Scotland; Don. J. Loofbourrow; Mt. Sterling, Ohio; Robert C. Lipsett, Glenboro', Man; Geo,ge A. Lipsett, Glenboro', Man; Fred. S. McA. Macdonald, Dundas, P. E. I.: Robert Weber, McKibbin, Buck Valley, Pa; Frank J. McNeal, Shickshinny, Pa.; W. Albert McNeely, Green River, Ont.; Colin McPherson, Glanworth Ont.; John McCay, Duluth Minn.; Donald McKercher, Petrolea, Ont., Fred. De Witt Markham, Port Leyden, N. Y.; Claude L. Megowan, Sacramento, Cal.; Peter J. Mertz, Yiiginville, Pa.; Richare A. Milne, Don., Ont.; J. J. Moore, Corning, Iowa; George F. Meyers, Danville Ill.; Henry H. Meyers, Youngstown, Ohio, Alfred A. Moody, Guelph, Ont.; William M. Morris, Cass City, Mich.; William Nicholson, Pittsburg, Pa.; Robert R. Nickell, Limehouse, Ont.; W. H. Oatway, Chicage, Ill.; Daniel George Peat, Plainsville, Ont.; Richard M. Phelan, Greenville, Pa.; Walter R. Pick, Columbus Wis.; William T. Pugh, Grafton, N. Nakota; Edward Rafter, Hamburg, N. Y.; G. G. Ratz, Red Bud, Ill.; Charles M. Roche, Cork, Ireland; Peter J. Roetz, Monches, Wis.; Henry C. Riddle, Waterloo, Ont.; J. R. Saxton, Strathroy, Ont.; M. J. Sexton, Minneapolis, Minn.; Arthur L. Shaw, Mt. Upton, N. Y.; Granklin Grifford Sheppard, North Evans, N. Y.; William Morris Stanley, Guelph, Ont.; Henry D. Stebbens, Westmoreland, N. Y.; W. Oscar H. Stener, New Haven, Conn. Archibald D. Stewart, Ailsa Craig, Ont.; James Stewart, Ailsa Craig, Ont.; Teoma. M. Sweeney, Richmond, Va.; M. B. Stiver, Mt. Albert, Ont.; James A. Tancock, London, Ont.; James W. Thompson, Cameron, Mo.; J. Thompson, Ctinton, Iowa; George P. Tucker, Lineoln, Neb.; Horace Bruce Taylor, Nicholasville, Ky.; Caesar Augustus Turley, Brandon Man.. Ernest George Vans Agnew, Fulda, Minn. Robert Vans Agnew, Fulda, Minn.; Frank Vans Agnew Rochester, Minn.; Edward F. Vorhis, Ithaca, N. Y.; Thomas G. Waghorn, Kirkton, Ont.; Duran M. Waldo, Grand Ledge, Mich., Edward K. Ward. Guilford, Ind.; John Welch, Strathroy, Ont.; William W. Welch, Elgin, Ill.; William Lincoln West, Ellsworth, Maine; Allan S. White, Glenallan, Ont.; Joseph Wingerter, Akron, Ohio.; Harvey W. Witmer, Greencastle, Pa.; Clarence D. Wooding, Waterbury, Conn.; Alexander H. Wright, Columbus, Wis.; Frank W. Waterman, Providence, R. I. Macy Weesner, Fort Wayna, Ind.; Fred. A. Wilson, Toronto, Ont.; Amos W. Young, North Liberty, Ohio; David F. Young, Alameda, N. W. T.

SOCIETY MEETINGS.

MONTREAL VETERINARY MEDICAL ASSOCIATION.

The fourth meeting of the session, 1894–'95, of the Montreal Veterinary Medical Association was held in the lecture room of the Faculty of Comparative Medicine on Thursday evening, November 29th, with the President, Dr. Adami, in the chair. Drs. Baker and Dawes were also present.

After the roll-call, reading and adoption of the minutes of the previous meeting the report of the Experiment Committee was received. Mr. Dell then called the attention of the society to the fact that while reports of these meetings were furnished the local newspapers, the reporting committee had, owing to pressure of other work, been unable to furnish the various journals with reports, and suggested that typewritten reports be sent to the veterinary journals.

The president expressed himself in favor of sending reports of original work, experimental or otherwise, to the journals. It would prove a stimulus to the essayists to do more work of this nature. It was decided to leave this to be carried out by the reporting committee.

Mr. C. H. Zink presented the asssociation with the details of an operation for the removal of a tumor from the vagina of an aged cocker spaniel bitch, the latter and also the tumor being exhibited to the members aiter the paper had been read.

Dr. Adami had microscopically examined the tumor and found it to be of myosarcomatous nature, evidently originating from the muscular tissue of the uterus.

These tumors are frequent in the human subject, and may develop in three ways, viz: Under the serous coat (sub-serous), in the uterine wall (intra-mural), or under the mucous coat (sub-mucous).

The doctor illustrated his remarks in a very instructive manner by blackboard diagrams.

Mr. J. C. Hargrave read a paper on "Canine Distemper," presenting a resume of the history, nature, causes, symptoms complications and treatment of this disease, special reference being made to the work of Mr. Everett Millais, who claims to have discovered the specific germ of the disease and produced immunity by inoculation.

A short discussion followed, Dr. Adami stating that the work of Mr. Millais had not been confirmed by recent observations, and that the germ of distemper still remains undiscovered. He pointed out that Dr. Cecil French working in his laboratory last

year had apparently repeated Millais' observations staining a micro-organism resembling his, which, however, was lost or disappeared during the course of inoculation.

The meeting then adjourned.

The Montreal Veterinary Medical Association met in the lecture room of the Faculty of Comparative Medicine on Thursday evening, December 13, 1894, with the President, Dr. J. G. Adami, in the chair. Professors D. McEachran and Baker were also present. After roll-call the minutes of the last meeting were read and adopted.

A letter was read from Dr. Dinwiddie donating a copy of his work on "Microbiology" to the library. The secretary was instructed to convey the thanks of the association to the donor.

On suggestion of Mr. Thurston, an additional day was appointed by the chair on which members can remove books from the library, but it is the privilege of the members to consult the books at any time during the day.

Messrs. Clark and Boutelle reported on behalf of the experiment committee, the experiments with anæsthetics.

Mr. E. H. Lehnert read notes on a case of "Protrusion of the Rectum in a Dog," describing the method of removal by sutures, which by constriction, produced sloughing of the everted portion. Dr. Adami suggested that blunt scissors, so useful in the removal of hemorrhoids, might also be used to advantage in these cases. Mr. Parker stated that he had used blunt scissors in castrating pigs, with excellent results. At this juncture Dr. Adami was called away, but before expressing his regrets he informed the society that he would exhibit a "Murphy button" at the next meeting and explain the indications and methods for its use.

The honorary president, Dr. D. McEachran, occupied the chair during the remainder of the evening.

Mr. C. A. Boutelle read a paper on the subject of "Enchondroma," giving a brief resume of the work of German and English writers on the subject, and adducing the results of some

original investigations in the pathological laboratory of the University. He described the microscopic appearance of a tumor weighing over ten pounds, found in the abdomen of a spaniel bitch on post-mortem. This was secondary to an enchondroma of the mammary gland removed a year previously.

The cartilaginous matrix of this growth had in some portions been replaced by a mucoid gelatinous material, and in others undergone calcification. Fibrous tissue was also present, and in the peripheral region was a considerable number of fat cells. Such a variety of tissue had in fact been found that the essayist described the growth as being of lipo-myxo-osteo-sarcomatous nature.

In the lungs and in some of the lymphatics were found growths having a tendency to osteoid formations. Another mass found also in the mammary gland, but at the site of the original operation, conformed in appearance to what human pathologists would term either malignant adenoma of carcinoma.

Dr. D. McEachran referred to the paucity of literature on the subject. He had, however, seen similar cases and found in nearly all a tendency to ossification.

After further discussion the chair appointed Messrs. Cowan and Inglis as essayists for the next meeting.

The meeting then adjourned.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK.

The regular meeting of the Veterinary Medical Association of New York County, was held on Tuesday, January 8, 1895, at 8 o'clock with the President, Dr. Huidekoper, in the chair.

On roll-call twenty-five members were found present.

The minutes of the last meeting were read and adopted.

The board of censors having no business to bring before the meeting it proceeded to the reading of papers.

Dr. Neher read a carefully prepared paper upon "Veterinary Education."

In the discussion that followed it seemed to be the opinion of

the members present that the requirements for matriculation were not severe enough, and that they were not adhered to by the different colleges.

A vote of thanks was then extended to the essayist.

Report of Judiciary Committee.—Dr. Giffen, Chairman, reported by reading a letter from the attorneys of the Association, which outlined a new bill to be presented at Albany, and at the same time pointed out several deficiencies in the present law.

A general discussion followed, after which it was moved that the report be accepted, and the committee continued.

Committee on Certificates.—Dr. Becket, Chairman, exhibited a copy of the certificate that had been accepted at a previous meeting, and stated the cost of the same.

Moved and seconded that the motion adopting the certificate be reconsidered, and a new committee appointed to draft a new form. Carried.

Committee on Location.—Dr. Robertson, Chairman, reported that a room could be had at the Academy of Medicine for $10 per night.

Moved and seconded that the committee be empowered to take the room at the Academy at a cost not to exceed $10 per night. Carried.

Committee on Charges.—Moved and seconded that the discussion on this report be laid over until the next regular meeting. Carried.

Committee on Revision of Constitution and By-Laws.—Dr. Robertson, Chairman, reported several changes in the Constitution and By-Laws of the association.

Moved and seconded that the secretary notify the members that there has been proposed amendments to the Constitution and By-laws at this meeting, and that they would be acted upon at the next regular meeting. Carried.

The president then appointed the following as a committee on certificates: Drs. Becket (Chairman), Turner and Giffen. Meeting adjourned.

J. E. RYDER, D.V.S., *Sec.*

VIRGINIA STATE VETERINARY MEDICAL ASSOCIATION.

The third regular meeting of the Virginia State Veterinary Medical Association was held in the Old Bank building, Charlottesville, Va., January 3, 1895, at 10 A.M., Dr. W. H. Harbaugh in the chair.

There were present: W. H. Harbaugh, V.S., Richmond; E. P. Niles, D.V.M., Blacksburg; T. A. Donaldson, V.S., Richmond; C. P. Dixon, D.V.S., Charlottesville; Wm. T. Gilchrist, V.S., Norfolk; D. B. Miller, M.R.C.V.S., Charlottesville; H. Marshall, D.V.S., Charlottesville; Geo. C. Faville, D.V.M., Norfolk, besides several members of the medical profession as visitors.

After the reading and approval of the minutes of the last meeting, the following members who had been recommended by the board of censors for election, were balloted for and elected to membership: F. P. Williamson, D.V.S., Raleigh, N. C.; R. D. Garcin, M.D., Richmond, Va.; Chas. McCulloch, Jr., D.V.S., Howardsville, Va.; E. S. Walmer, V.S., Washington, D. C.; John E. Miller, V.S., Richmond, Va.; C. B. Robinson, V.S., Washington, D. C.

Under the head of new business, the following resolution, which was adopted by the United States Veterinary Medical Association at its last meeting, was read:

WHEREAS, We, the United States Veterinary Medical Association, do condemn the operation of docking horse's tails as an operation of fashion, believing that nature intended them as a defense against insects, etc. But so long as it is demanded as an operation of fashion we believe that it should be performed by skilled veterinarians, who are sure to perform it with greater care, less pain and suffering to the animal, and we cannot unqualifiedly condemn those who perform the operation under such conditions.

Dr. Harbaugh discussed this as a decided straddle of the question, the resolution being in one instance a condemnation of the operation and in the other favoring the operator. The question was discussed by most of the members present, when Dr. Gilchrist, of Norfolk, introduced the following:

WHEREAS, The horse's tail is intended by nature as a means of defense against pestiferous insects, etc., the Virginia State Veterinary Medical Association unqualifidely condemns the practice of docking tails for mere fashion's sake. There are rare instances when it is necessary to amputate a portion of the tail on account of disease or injury as it is often necessary to amputate the leg or arm of a human being, but the indiscriminate habit of docking tails serves no useful purpose whatever and entails needless suffering on the part of the helpless dumb animal, not only from the manner in which it is done, but also during the remainder of the animal's life from various insects; therefore be it

Resolved, That we, the members of the Virginia State Veterinary Medical Association, pronounce the docking shears an instrument of inhuman contrivance, and consider the habit of docking tails a cruel and barbarous practice,

Resolved, That we do not consider the unnecessary docking of tails a surgical operation, and members of this association are justified in refusing to perform it.

After considerable discussion the resolutions were adopted.

The Committee on Legislation and Jurisprudence had no report, but brought the question up for discussion. After considerable discussion it was moved and carried that the committee be increased from three to five, which was done, by adding Drs. Niles and Miller.

Dr. Adamson being absent, his paper on "Hydrophobia" was read by the secretary, and was listened to with much interest. After a most substantial and elegant lunch, at which the association was the guest of the members from Charlottesville, discussion of the above paper was taken up. The discussion brought out the interesting fact that very few of the members had seen many cases of rabies, and several of them none. It was concluded that there are very few cases in this State.

Dr. Niles, of Blacksburg, read some notes on recent experiments with tuberculin. The subject is of such interest that it was discussed at length, all the members taking part.

Drs. Faville and Gilchrist reported some interesting cases of encephalitis, after which Dr. W. H. Harbaugh read a very interesting paper on "Southern Cattle Fever."

After adjournment for supper, the association met in the office of Drs. Marshall and Dixon. Dr. Niles related his experience as veterinary examiner of horses for the Virginia Exposition, which, had it not been so serious from a professional

point of view, would have been truly comical. It was evident that veterinary examinations in this State are not as yet popular.

After a discussion of various questions of interest to the association, it adjourned after one of the most successful meetings in in its history.

The annual meeting will be held at the Agricultural College, Blacksburg, Va., June 26, 1895.

GEO. C. FAVILLE, D.V.M., *Sec.*

OHIO STATE VETERINARY MEDICAL ASSOCIATION.

COLUMBUS, O., January 15, 1895.

The Ohio State Veterinary Medical Association convened for its twelfth annual session, in Wells Post (G. A. R.) Hall, in Columbus, O., January 15, 1895, President J. D. Fair, D.V.S., in the chair, who called the meeting to order at 7:45 P. M. Minutes of the previous meeting were read and approved. On roll-call the following members answered to their names: Drs. H. M. Ball, T. B. Cotton, L. W. Carl, W. F. Davis, J. D. Fair, Wm. H. Gribble, T. B. Hillock, W. R. Howe. Neil B. Jones, J. C. Myers, Jr., Walter Shaw, W. E. Wight.

There were present also Prof. H. J. Detmers, Professor Fisher, and Drs. P. Dillahunt, J. H. Blattenburg, G. W. Butler, J. V. Newton, and C. Leist.

President Fair stated that the first business was nomination and election of officers for the ensuing year, and asked for names.

Dr. Gribble nominated Dr. J. D. Fair for president; Dr. Howe, Dr. Neil B. Jones for 1st vice-president; Dr. Cotton. Dr. H. M. Ball for 2d vice-president; Dr. Hillock, Dr. W. H, Gribble for secretary; Dr. Wight, Dr. T. B. Hillock for treasurer.

There being but one nominee for each respective office, it was moved, duly supported and carried that the secretary cast the vote of the entire membership for each and every nominee.

This being done, the chair declared the following as the association's choice for officers for the year 1895, to wit:

President, J. D. Fair, D.V.S., Berlin, O.; 1st Vice-president, Neil B. Jones, V.S., Chilicothe, O.; 2d Vice-president, H. M. Ball, D.V.S., Columbus, O.; Secretary, Wm. H. Gribble, D.VS., Washington C. H., O.; Treasurer, T. B. Hillock, V.S., Columbus, O.

The secretary read the application for membership of J. H. Blattenburg, V.S., Lima, O., graduate of Ontario, class of 1892; vouchers, Drs. W. R. Howe and W. E. Wight. There being no objections, the ballot was dispensed with and the doctor elected a member.

The doctor being present the president called him to the front and introduced him to the members present, whereupon he thanked the association in a few well-chosen remarks.

Dr. G. W. Butler, of Circleville, O., applied for readmission as a member, he having withdrawn (for business reasons) some two years ago. In the past the doctor had been one of our most active workers; so a hearty, unanimous vote soon again admitted him to membership.

The presldent stated he had prepared no annual address, so this would be dispensed with, and he called upon Dr. W. R. Howe, who responded with an able, instructive and scientific essay on the "Diseases of the Eye," the doctor being especially particular as to the nomenclature. The discussion which followed was a very lengthy one, leading into an argument as to whether the use of cocaine did or did not retard the healing process; and also as to the relative value of the different varieties of the peroxide of hydrogen, and on the use of nitrate of siver as a collyrium.

Prof. Paul Fischer, of the Ohio University, was present and took part in the discussion, after which, by request, he promised to prepare a paper on the so-called disease, "Moon Blindness," and read the same at to-morrow's meeting.

Dr. Gribble had seen a case of congenital lachrymal duct having no inferior opening. Dr. Jones had seen such a case

operated on by making an opening into the nostril, and the tears drained away, but did not know whether the result was permanent or not, as the case was lost sight of.

The discussion having been prolonged it was getting late, so the meeting adjourned, to meet again the following morning (January 16th) at 8 o'clock.

WEDNESDAY, January 16, 1895.

Meeting called to order at 8:15 A. M., President J. D. Fair in the chair, who called upon the Committee on Contagious Diseases for their report.

The committee had no regular prepared report, but the chairman (Dr. Cotton) gave an interesting account of a so-called outbreak of hydrophobia in the city where he resides (Mt. Vernon), detailing the number bitten and sent away for treatment, etc.

Dr. G. W. Butler at this point read reports of a few interesting cases coming under his own observation, which he thought was also this much dreaded disease.

The Committee on Veterinary Education was next called upon, and rendered the following report, to wit:

We, your Committee on Veterinary Education, respectfully submit these few suggestions and recommendations relative to educational requirements and other channels for exalting the veterinary profession.

1st.—That a higher and uniform matriculation examination, embracing all studies of graded schools, should be prescribed by all recognized veterinary schools or colleges.

2d.—That the course of study at all schools graduating veterinary physicians and surgeons should be not less than three sessions of full six months each, with a Faculty embracing no less than ten professors, five of whom should be veterinarians.

3d.—That a final examination be prescribed, exacting no less than seventy-five (75) per cent. average in all studies.

4th.—That the State examining board recognize as qualified practitioners only such graduates as above, and such others as have been in actual practice for a term of not less than ten consecutive years.

5th.—That a committee be appointed to press the claims and respective qualifications of veterinarians to positions on live stock boards, also to recommend their ap-

pointment as meat and dairy inspectors, and to positions as members on State and local boards of health.

All of which is respectfully submitted.

NEIL B. JONES, V.S., *Chairman;*
W. R. HOWE, V.S.,
T. B. HILLCOK, V.S.,
Committee.

It was moved by Dr. Gribble, and seconded by Dr. Wight, that the report of the committee be adopted, and the suggestions, etc., be endorsed as a series of resolutions emanating from this association. Carried.

Dr. W. F. Davis now read a short essay on "The Use of the Thermo-Cautery, with Especial Reference to Paquin's Patent," but calling attention to the different methods employed and instruments used in "Firing."

A very instructive discussion followed this paper, showing again how great minds will differ. Dr. Howe used a storage battery which could not be beat, while Dr. Meyers used electricity conveyed from Edison system, and this was *par excellence* while a number of others had used different methods; but none equalled the old-fashioned firing iron, heated with charcoal or in a benzine blaze, for good, substantial, beneficial results.

Dr. Paul Fischer, of the Ohio University, now entertained the members with a very scholarly scientific essay on the disease of the eye so-called "Moon Blindness." This essay was worthy of earnest attention, as it was composed largely of the evidence arrived at by continental veterinarians, so that most of us not acquainted with French or German could otherwise receive the benefit; coupled with the studious attention given the disease by the essayist himself. The discussion which followed was a long one, during which the essayist ably defended the views which he had advocated.

Prof. H. J. Detmers asked of the chair the privilege to explain the new Ohio veterinary law, which the profession said he was the promoter of. The request being granted, he stated that the great difficulties encountered on presenting the original bill to the legislature, the hints for money to aid its passage, the

amendments made, etc., so that the bill as finally passed was the very best law that could possibly have been enacted at the last session of the legislature. It was moved, duly supported and carried that we now discuss the new law. It was first read as a whole, then read section by section, discussed and criticised. each section in its order

At 12:30 P. M. the president called attention to the time of day. It was moved that the chair appoint a committee of three to audit the books of the secretary and treasurer, after which we adjourn until 2:50 P. M. Carried.

The chair appointed Drs. W. E. Wight. G. W. Butler and Neil B. Jones. Meeting now adjourned.

AFTERNOON SESSION.

President J. D. Fair was in the chair, and the meeting was called to order at 2:15 P. M.

Professor Detmers not being present to continue the discussion on the veterinary law, the chair called for the report of the Auditing Committee. It was given as follows:

We, your committee appointed to audit the books of the secretary and treasurer, beg leave to state that we find the same well kept, and a balance in the hands of the treasurer of $291.04, irrespective of the receipts and expenditures that will come before this session in the report of the secretary.

W. E. WIGHT,
G. W. BUTLER,
NEIL B. JONES,
Committee.

Moved by Dr. Ball, seconded by Dr. Jones, that the report of the committee be accepted. Carried.

It was moved, duly seconded and carried that a vote of thanks be given all who read papers, and that the secretary request Professor Fischer to allow his essay to be published as part of the proceedings of this session. Dr. Gribble said the other essayists must not think themselves slighted because they had not been personally requested to allow their papers published, for if they would read the by-laws they would find that papers read by members, belonged to the association, for publication.

The next in order was the secretary's report:

The secretary would first call your attentiun to the fact that the expenditures tor this session ($22.35) are considerably larger than common, owing to the fact that at our last annual session you instructed us to purchase a new cash book and ledger, (the same is before you, open for your inspection); and at the last semi-annual session you instructed us to purchase stationery for both the president and secretary. This has been done. In transferring the accounts from the old to the new books, the following facts came to light, *viz.*:

That on July 24, 1883, twenty-five veterinary surgeons met in Columbus, O., and organized the Ohio State Veterinary Medical Association.

From the date of organization, up to and including to-day, there have been received into membership a total of seventy-six (76), of which Ontario Veterinary College furnished fifty-one (51); American Veterinary College, two (2); Montreal Veterinary College, one (1); Royal College of Holland, two (2); Royal College of Vienna, one (1); and non-graduates twelve (12).

With the usual ups and downs of all associations, we now have a membership roll of thirty-four (34), composed of Ontario graduates, twenty-three (23); American college graduates, six (6); Chicago graduates, two (2); Montrcal graduate, one (1); Vienna, one (1); non-graduate, one (1).

WM. H. GRIBBLE, *Sec.*

The chair appointed Drs. T. B. Cotton, W. R. Howe and H. M. Ball a committee on veterinary education, and Drs. T. B. Hillock, W. F. Derr and J. C. Meyers, Sr., as a committee on contagious diseases.

Next business was the selection of a place of meeting for semi-annual session Dr. Neil Jones in a brief speech asked the association to select Chillicothe, which was seconded by Dr. Butler; Dr. Hillock named Cincinnati, and Dr. Wight seconded this latter. No other cities were named, but this number necessitated a ballot, which resulted in Chillicothe receiving seven votes, and Cincinnati six, with other ballots blank. The chair declared Chillicothe to be the place for our next meeting, and instructed the secretary and Dr. Neil Jones to name the date and notify all members.

The secretary read an official invitation from the officials of the Ohio State University inviting us to visit that institution in a body, free conveyance being provided.

Dr. Gribble exhibited (in alcohol) a part of the small intestines of a chicken, which had upon and in it quite a number of

nodules of varying sizes, containing a cheesy pus, with a history of owning seven game pullets. He had procured a game cockerel, which shortly after getting it appeared sick and dumpish, gradually getting worse but suffering apparently no pain, until it wasted away, a mere skeleton, and all seven of the pullets followed suit. On examination, the members pronounced the trouble to be tuberculosis.

Professor Detmers being now present, the reading and discussion of the veterinary law was continued, and when after several hours the discussion closed most of the members had a better opinion of the law than they had before. as it was an entering wedge upon which all must now unite, and secure, if possible, amendments which will obtain for us a better acknowledgment of the profession in the State of Ohio.

There is now a vacancy in the Board of Veterinary Examiners, and this association suggested the names of Drs. J. D. Fair, W. E. Wight and W. F. Derr to the Governor, from which to select one as a suitable veterinarian to fill the vacancy.

The association now adjourned, to meet in Chillicothe, in semi-annual session at the call of the secretary, the date to be named by Dr. N. B. Jones.

WM. H. GRIBBLE, D.V.S., *Sec.*

MASSACHUSETTS VETERINARY ASSOCIATION.

The regular monthly meeting of the Massachusetts Veterinary Association was held at 19 Boylston Place, on Wednesday, Dec. 26, at 7.30 P. M.

The members present were Drs. Bunker, Burr, Emerson, Labau, Osgood, Parker, Winchester and Winslow, and several visitors.

The names of Drs. Walker and Taunton, a graduate of University of Pennsylvania and A. J. Sheldon, of 50 Village street, a graduate of the American Veterinary College, were received and laid on the table for a month. The name of Dr. Sheldon was reported on favorably by the members of the Executive Com-

mittee present (Dr. Winchester and Labau). Dr. Walker's credentials had not been received.

The matter of appointing a committee on legislation then came up. Dr. Winchester opposed the formation of such a committee as it would be of no practical benefit and would tend to bring the Association more or less into politics. He thought the Association should take no active part in any political movement. We have no axe to grind and no favors to ask and we should keep out of it.

Dr. Parker supported the formation of such a committee. It is not right. he contended, that the Association should be so entirely ignorant of the legislation that is going on. He recalled the incidents of the past year when legislation of the greatest importance to the profession was enacted by the legislature, and yet the Association was entirely ignorant of such proposed legislation, Such a state of things should not be allowed to continue, and he moved that such a committee be appointed by the Association. This motion was seconded by Dr. Becket. Dr. Bunker supported the appointment of the committee; he was distinctly in favor of it, and on being put to the meeting it was carried unanimously.

Nominations were made from the floor, and election by ballot. The committee were appointed after two ballots, with the following result: Dr. Howard, 8 votes; Dr. Bunker, 6 votes and Dr. Osgood, 6 votes.

The Secretary then asked the members for papers, and Dr. Bunker volunteered a paper for next meeting and Dr. Winslow volunteered for February.

The Secretary then suggested that an effort should be made to make the meetings more interesting. He thought it would be a good idea if the chairman were to ask each member present to report verbally and in a conversational way any interesting cases or any matter of interest to the profession. The idea was adopted and the chairman made a beginning by calling on Dr. Winchester to give the Association the benefit of any cases of special interest he had had lately.

Dr. Winchester reported a case of lameness in the stifle joint. The joint was much swollen and nodular to the feel; it has been more or less enlarged for upward of a year. He opened it and extracted a number of tumors (8) which had the appearance of fibrous tissue; made a good recovery.

Dr. Labau reported a case of traumalic pleurisy in a mare in foal. She had kicked against a fence and a portion of the fence had broken off and pierced the wall of the chest between the thirteenth and fourteenth ribs, exposing the lung. The external wound healed nicely and she seemed to make a good recovery with little rise in temperature. During the third week, however, the chest began to fill and she finally died in about three weeks after injury. The interesting point in the case was that she lived so long after the lung had been exposed.

He also referred to a case of osteo-sarcoma in a horse treated with pot. iod. and recovery in three months.

Dr. Beckett reported a case of pneumonia in which death resulted from heart disease. A post-mortem examination showed a deposit of lime salts on the auricles. They had completely lost their contractile power. The condition was confined to the auricles. There was slight local pericarditis and little effusion.

Dr. Bunker reported a case of cow supposed to have died from tuberculosis. Post-mortem examination showed pieces of hay wire in the heart. He also reported an autopsy in a cow in which they had found a tumor six or seven inches in diameter attached to the inside of the rumen. Dr. Burr said he thought it was papilloma but he had not yet made a microscopical examination of it.

Dr. Osgood spoke about abscesses in liver being of freqent occurrence. They were not of tuberculous origin. He advocated investigation being made to determine their character,

Dr. Parker reported case of cystitis in a mare. She had been in this condition for some time. She urinated and strained frequently. Digital examination showed the m. m. of the bladder to be thickened and easily removed. He removed a piece three or four inches square. The stench from the membrane was very

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bad. The bladder was washed out with boracic acid solution and boracis was given internally. The mare made good recovery. The peculiarity of the case was that a man had been seen to go the mare's stall and raise himself by standing on a bucket, place his arm in the mare's vagina and take "satisfaction" in this way. On one occasion, at least, he introduced his penis into the mare, and the question arose as to whether such an act would cause this condition on the mare.

There being no further business, the meeting adjourned.

JOHN M. PARKER, *Secretary.*

ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION.

A meeting of the Illinois State Veterinary Medical Association held at Peoria, Ill. (National Hotel), February 28th, '95. The meeting was called to order at 11 A. M. by the President, Dr. M. Wilson of Mendota, Ill. On roll call by the secretary the following members responded. Drs. A. G. Alverson, G. Z. Barues, A. Babb, Geo. Ditewig, C. V. Hartman, R. W. Story and M. Wilson. On motion of Dr. Hanawalt, a graduate of the Chicago Veterinary College, Class of 1892, who was vouched for by Dr. A. M. Story was elected to membership by acclamation.

Society then adjourned for dinner. On convening at 2 P. M. the society listened to a paper by Dr. Ditewig entitled "The Strongyli Tetracanthus and Armatus, as a Cause of Death." A lengthy discussion then took place in which most of the members present related their experience with those helminths.

On call of the president Dr. Barnes next read an essay entitled "What of the Future of the Veterinary Profession?"

This paper called forth a general discussion, after which Dr. Babb responded to his name with a production, the "Etiology of Tuberculosis."

At the close of the discussion that followed, Dr. Stringer made a motion, which was seconded by Dr. Ditewig that the president extend the regrets of the society to Dr. J. W. Parkinson in his present illness and express our hopes that he may recover.

On motion the society adjourned to meet in Chicago next November.

ALBERT BABB, B. A., M. D. C., *Secretary.*

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

The annual meeting of the Veterinary Medical Association of New Jersey was held at the State Street House, Trenton, on Thursday, April 11th.

The reports of the secretary and treasurer show the Association to be in a flourishing condition. The officers are:—President, Dr. J. W. Hank, Newark; First Vice-President, Dr. J. Gerth, Newark; Second Vice-President, Dr. R. O. Hasbrouck, Passaic; Secretary, Dr. S. Lockwood, Woodbridge; Treasurer, Dr. B. F. King, Little Silver. Trustees, Drs. W. B. E. Miller, L. P. Hurley, R. O. Hasbrouck, W. Runge and J. C. Dustan.

The number ot applications for membership received at this meeting should infuse new life in the older members.

The revision of the Constitution and By-Laws, and other important busines consuming so large a part of the day that but one paper was read. A larger number of cases reported than usual. The next meeting will be held in Newark, in October.

KEYSTONE MEDICAL VETERINARY ASSOCIATION.

The monthly meeting of the Keystone Veterinary Medical Association was called to order by President Lintz at the office of Dr. W. H. Hoskins, 3452 Ludlow street, Philadelphia, Tüesday evening, February 12, when the following members answered roll-call. Drs. Bridge, Eves, Hoskins, Lintz, McAnulty, McClellan and Rhoads, with Drs. J. T. Fairley and J. O. George present as visitors.

Dr. Hoskins as chairman of the legislative committee gave a concise history of the movements and present position of the bills, now before the legislature in which all progressive veterinarians should be interested, (vis) to establish a live stock

sanitary commission in the state. Dr. Edges bill being modified and blended with the one known as the veterinarians bill is now as house bill 24.

There is also a bill to establish an office of state veteriarian on the state board of agriculture. And another introduced by Mr. Darvey to prevent the docking of horses.

The application of Dr. L. Pearson for membership was referred to the board of censors.

The assayist being absent cases were next reported.

Dr. Bridge said the supposed cases of cont. pleura pneumonia reported at Chester Heights and Danville were only bronchial troubles. He also reported case of letamus in cow from acute peritonites also case in Jersey cow from puncture wound of foot by a nail.

Dr. Hoskins reported recovery from tebainus in three weeks with bromide potaseum treatment.

Dr. Eaves thinks if case is brought in when first injured (guncture wounds of feet) if soaked in creoline solution, tetamus would be prevented.

Dr. Lintz exhibited clamp used in fracture of infra or sufra maxillary bone.

W. L. RHOADS. *Sec.*

The March meeting of the Keystone Veterinary Medical Association was called to order by President Lintz at the office of Dr. W. H. Hoskins, 3452 Ludlow street, on the 12th inst. The following members being present:—Drs. Ridge, Eves, Goeutuer, Hoskins, J. R. Hart, Lintz, Rhoads and McAnulty. Dr, Allen being present as visitor.

Dr. Hoskins as chairman of the legislative committee reported the bill to place a veterinarian officially on the state board of agriculture to now need only the governor's signature to become a law.

The bill to establish a state board of veterinary examiners

is in the same position it was a month ago and now stands little show for consideration this session.

The Veterinary Examining Board of Ohio meets April 2nd and have invited Dr. Hoskins to be present.

After this report the qualifications of the known applicants for state veterinarian under the new law were thoroughly considered and discussed. It was urged that at this time a man should be selected who is particularly well fitted and naturally adapted for this work that the people might learn to repose greater confidence in the profession.

On motion the president appointed Drs. Hoskins, Bridge and Hart as a committee to select from the applicants the one they thought best fitted to honor and advance the profession as State Veterinarian.

The committee after due deliberation selected Dr. Leonard S. Pearson as best qualified and adapted to this work.

The Board of censors were instructed to look for a larger meeting room as the attendance made more room essential. They were also instructed to consider the advisability of reducing the annual dues and see to a revision und reprinting of the by-laws of the association.

The Board of Censors having favorably reported the application of Dr. Leonard S. Pearson, for membership he was now elected to membership by an unanimous vote.

Dr. Goentner reported a very interesting case of pernicious anemia in a running stallion.

As the time was taken up in discussion the reading of papers was postponed.

The meeting adjourned to meet at the home of Dr. Kooker, April 12th.

W. L. RHOADS, *Sec.*

WANTED—A PROTECTIVE LAW FOR VETERINARY PRACTICE.

NEW TREATMENT FOR COLICS IN HORSES.

Tuesday forenoon in the Superior Court the famous red liniment case, wherein Dr. Eben Maxwell is the defendant, came up for trial.

Hon. B. F. Hamilton, of Biddeford, Me., and Fred H. Cobb, of Portland, Me., appeared as his counsel.

Assistant County Attorney Webb opened for the government, and related briefly the facts of the case that will appear further on in the testimony.

James E. Kennard, who has charge of the city stables on Hanover street, testified as to the sickness of the horse, and the calling of Dr. Maxwell. When he arrived the horse was lying in the stall, showing indication of pain in its bowels; Maxwell poured a quantity from a bottle of liniment into the horse's ear, without making any previous examination. The horse shook its head as if in pain. Witness and Street Commissioner Staples used bags of hay to save the horse from injury while thrashing its head.

Frank W. Daicy, driver of the horse, testified to much the same effect.

Street Commissioner Staples testified as to his presence at the stable at about 2 P.M. The horse was lying in the stall and thrashing about very hard; its head would come down on the floor and shake the barn. They protected him with bags of hay. Maxwell was there. The first thing he did in witness's presence was to pour a liquid on the horse's belly. Then he put a powder on the horse's tongue. Witness asked what it was. Maxwell replied that it was a good thing and had saved his life or somebody's life. Then he felt the horse's pulse, etc. Witness said to him that he had humbugged and fooled around there, and told him he'd better go. He'd got enough of him. Then he sent for Dr. Lord.

Cross-examined by Mr. Hamilton: The horse was thrashing about the stall. It was lying on its side. It would roll itsself up on its belly and then bring its head down on the floor. This continued for a half hour.

The horse was in intense pain. Witness never saw a horse thrash its head so. He had no doubt that Maxwell was doing as well as he could.

"Didn't he stop his sweating after the doctor gave him a powder?"

"Yes, he stopped breathing, too." (Laughter).

"I mean immediately after the doctor's acts?"

"No, he did not stop sweating then."

Mr. B. C. Miles, a constable of Portland, Me., called upon Maxwell the 13th day of December, and asked him if he had anything good for the rheumatism. He sold him a bottle of red liniment, and Miles placed him under arrest for pouring the liniment in the horse's ear. The liniment was produced in court.

The proper treatment for a horse suffering from inflammation of the bowels would be the use of hot baths, hypodermic injection of morphine, the use of stimulants, etc.

There is no passage by which fluid poured into the ear could reach the bowels.

Witness smelled of the bottle of red liniment and said he should say there was chloroform in it. If an ounce of chloroform in a quart of water was administered, it would raise a blister. It is so used to blister the mucous membrane. It is used as an irritant.

Cross-examined: He had practised for five years. He came to Portland, Me., in the fall of 1890. Had practised previously in Salem, Mass. His age was 25 years. Witness described his examination of the horse, which led him to determine the cause of its death. He couldn't say how much chloroform was in the red liniment. It is an irritant. It is not soothing in its effect if it is an irritant. It is only used to as a counter-irritant. He found a dozen, more or less, blisters in the horse's ear.

If a horse is troubled with the colic he would not have any

trouble with his head as a result. The witness was decided about that point, though Mr. Hamilton endeavored to get him to state that colic would induce pain in the head.

At this point the defence moved that the court instruct the jury to find a verdict of not guilty on the ground that it was necessary to show that there must have been malice on the part of the respondent, and no malice had been shown by the testimony.

Counsel for the prosecution contended that the statutes did not indicate that cruelty and malice are synonymous terms.

Judge Bonney overruled the point, and called for the defence's witnesses.

Exceptions were taken to the ruling.

AFTERNOON SESSION.

In the afternoon the witnesses for the defence took the stand.

Dr. Maxwell, the defendant, was the first witness. He testified that he was almost 71 years old. He had been a veterinary surgeon for over thirty years. The bottle of red liniment was handed him, and he was asked if he manufactured that liniment.

"I did once, but that isn't my liniment now."

"Why?"

"Because it has been adulterated. If anything touches this liniment, the finger or anything, it is adulterated."

He bathed the horse's head with the red liniment to soothe him, as he had been banging his head on the floor. He only had with him half of an ounce bottle of it. He put most of it on his head, was going to put it in his ear, but found that he hadn't enough to make it worth while. Had he had enough, he should have poured it in the ear to quiet and soothe the ear.

His treatment seemed to quiet the horse. He put a plaster on his bowels to ease the pain.

Witness had been there forty-five minutes before Mr. Staples came.

Staples asked witness what the trouble was. He told him, and Staples said that it was only a case of bellyache, and he wouldn't be needed any longer. When he went away, the horse was quiet, and looked as if he would get well if properly treated. If he died it was because he was allowed to get a chill.

For thirty years he had used the red liniment in his own ears, eyes, mouth, and every part of his system. He had cataracts in his eyes that Dr. Green told him he would have to have taken out, but the red liniment cured the cataract. He used to have sore ears and the red liniment cured them. He put it in his mouth for toothache and sore mouth.

There was nothing in it that would blister. It is an impossibility to blister with it.

"For diphtheria, take twenty drops in water and gargle the throat, and I'll warrant it to cure."

Witness waved a bottle in the air, as if pouring it on top of his head and in his ears and down his neck, and offered to pour it in reality, but receiving no encouragement did not pull the stopper out.

He had put it in a horse's ears when its eyes were white as snowballs, and in less than a minute the eyes were as clear as any eyes.

Cross-examined.

"What is this red liniment made of?"

"Alcohol, chloroform, ether and essential oils. I don't want to tell just what it is made of. I've been offered $1,000 for the recipe of it."

Witness went on to say that it would cure a headache in less than a minute.

"Does it make any difference as to the cause of the headaches?"

"I've cured a man with the headache in half a minute, that I know had been drunk for five days."

"Do you understand what the word abdomen means?"

"I understand it means something the same as the rectum."

Then he said it meant the stomach, then complained of his

memory, and said: "Give me time enough and I can answer any question you can ask me."

"Do you understand what an anæsthetic is?"

The witness was silent, and evidently did not.

"Do you understand that there is a communication between the ear and the stomach?"

He had found that there was a communication between the ear of a horse and his stomach, and had cured many of them of colic by pouring the liniment into their ears.

He had put liniment in horses' ears for the purpose of making them shake themselves and start the wind in case of colic.

Arthur S. Jordan and Joseph F. Small, of Cape Elizabeth, Me.; Charles L. Robinson, of Portland, Me.; George C. Place, of Cape Elizabeth, Me.; William H. Wentworth, of Scarboro, Me.; Ellis Maxwell, of Portland, Me., and William Ramsdell, of Deering, Me., all testified that they had used the red liniment, and that it did not blister, and that they had seen it put in horse's ears, and that it did not blister, but did cure the colic.

After the closing arguments and the judge's charge, the jury were out but a few moments and brought in a verdict of "not guilty."—*Portland* (Me.) *Press*.

OBITUARY.

We have received, a short time ago, the news of the death of Dr. George B. Burchsted, of New York City, which took place in St. Luke's Hospital, New York City. Dr. Burchsted was suffering with diabetes since a long time. He graduated at the American Veterinary College, class of 1891. He originally came from Providence, R. I.